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Including the Railroad Gazette and the Railway Age

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CONTENTS

EDITORIAL:

Editorial Notes	1223
Modern Locomotive Boilers.....	1224
The New York, Westchester & Boston.....	1225
The Railway Accident Situation.....	1225
New Books	1226

LETTERS TO THE EDITOR..... 1227

ILLUSTRATED:

New York, Westchester & Boston; by Gilbert G. Browne.....	1229
Central of New Jersey Ice Car.....	1239
New Design for Headlight and Car Numbers.....	1241
Alcohol Heater Car	1244
The Chicago Car Door.....	1246

MISCELLANEOUS:

Report of Hoosac Tunnel Collision.....	1234
Use of Form 19 for All Train Orders.....	1235
F. C. Rice and the American Railway Association on Accidents.....	1237
The Tap Line Case Supplemental Report.....	1242
Foreign Railway Notes.....	1228, 1233, 1234, 1245

GENERAL NEWS SECTION..... 1247

THE letters from Charles Frederick Carter and Arthur J. Carruth, Jr., both journalists, on the relations of the railways and the newspapers, which we publish elsewhere, present two quite different points of view. Mr. Carter extols the advertising policy by which the railways have helped to build up the population and industries of extensive sections, but implies that as to news regarding railways, the railway men often won't furnish it and the newspapers often won't print it. Mr. Carruth's experience is that railway men will furnish news and that the newspapers will print it, although the railway man often complains with justice that it isn't printed correctly. These two points of view to some extent reflect, on the one hand, newspaper and railway conditions in Gotham and the East, and on the other hand, the like conditions in the West. On the whole, the

relations between the railways and the newspapers in the West are probably closer than they are in the East. This is largely because the western press has commonly been more disposed to hammer the roads, and has thereby taught many railway men that it is best in a democratic country for the managers of large businesses to get down off their pedestals and keep in touch with their fellow-citizens both personally and through the press. A pedestal is not precisely the best place from which to negotiate or fight, and diplomacy and war have played the most important parts in railway management in recent years, especially in the West. They are going to continue to play the most important parts. The railway problem is far from solved. Two things are requisite to solve it and avoid the terrible economic and political calamity of public ownership. One is continued rapid advance toward the reduction to the practicable minimum of abuses in the railway business. The other is the substitution in the public mind of the facts about the railway business for the fictions that now so largely occupy it. The one instrumentality that can do most to eliminate the abuses in, and to educate public opinion about, the railway business is an intelligent and honest press. A considerable part of the press needs reforming worse than the most dishonestly and incompetently managed railway that ever existed. There is no hope of a fair deal for the railways from what Mr. Carter describes as "erotic, neurotic and tommyrotic journalism." But as the management of most railways is sound and honest, so is the management of most newspapers; and as the better class of concerns of each kind greatly predominates, surely it ought to be possible for the one to furnish and to get published, and the other to obtain and publish, the sort of information whose publication will be beneficial to them and to the public, to which they owe an equal duty.

THE Massachusetts railway commissioners have made a report on the disastrous collision which occurred in the Hoosac tunnel last February—a very clear and temperate document; and their conclusions are reasonable. Most railway men will say, probably, that the commissioners are excessively cautious; but in cases of doubt or disagreement that is about the only recourse available to public officers. Moreover, that is often the way that railway officers themselves settle these difficult questions. The railways cannot complain much at this attitude of the state until they themselves make more thorough and persistent effort to remove the causes of doubts. On the immediate question of the cause of the collision, the commissioners can only say that probably it was a false clear block-signal indication. And from the facts, as stated, it does not look as though anybody could do any better. The story of the runner of the steam engine of the passenger train is of the kind which would stimulate most investigators to inquire into his motive and see if he were under any temptation to falsify; but the commissioners, who, we judge, were awake to every circumstance, do not suggest anything of that kind. If the four men on that engine were lying, or if a part were lying and the others were deceived, we should expect the inquiry to have at least given some hint of the fact. And the fact that the runner of the electric locomotive increased his speed, apparently with purpose, tends to confirm the statement that the signal did change to clear while the freight train was in the block. In ordering the railway to operate the automatic block signals as "stop and stay" signals, the commissioners are not unreasonable, for, with the telephone available, this need not be an inconvenient arrangement. The company is going to put in a telephone at every signal in the tunnel. Of course, it will be desirable, and perhaps necessary, to avoid stopping heavy freight trains on that part of the line which is up-hill, which means that the signals must be kept in perfect order and that freights must not be admitted to the tunnel on such short time intervals that they will habitually overtake one another. The use of automatic block signals as "stop and stay" signals would

be an interesting and useful experiment to try at many other places. With this plan, the recommendation that passenger trains (not freight) be kept three blocks (five miles) apart seems an excess of caution. Probably the greatest danger from a rear collision in the tunnel is the possibility of obstructing the adjacent track and the liability to fire; and in this view a collision of freight trains is as bad as one of passenger trains. The remorse over this collision is in one sense like that over the Titanic disaster: an alert person could have prevented it. Accepting the view that the automatic block signal wrongfully cleared—the home and the distant being seen to change at the same time—a thoroughly experienced, wideawake and thoughtful runner would have known that the clearing was abnormal. The commissioners are right in saying that enginemen cannot be required to compare, reflect and make mental deductions when they read a signal; but the fact remains that very often lives are saved because men do thus reflect, carrying out in two seconds a mental process for which the ordinary person would take perhaps minutes. Every passenger runner should have all the accomplishments of the best passenger runner. No superintendent can train all of his runners to be equal to the few of the best grade, for their natural deficiencies will partly thwart his efforts; but he can apply the training process to all, and that task is comparatively easy and simple. But it is not inexpensive.

MODERN LOCOMOTIVE BOILERS.

THE development of the locomotive boiler in recent years has been remarkable. It would seem that its size had been pushed to the maximum limits for both freight and passenger service. Those for Mallet locomotives furnish steam for a tractive effort of 100,000 lbs., and for passenger service they have reached the limits in height and width which roadway and structures will permit, and their capacity is more than 2,200 h. p. Improvements in the locomotive engine, the use of superheated steam, liquid fuel and very large cylinders, have all resulted in decided modifications of the type of boiler in general use a few years ago.

Some of these changes have their effect on the maximum working pressure, and there is a marked tendency toward pressures below 200 lbs. Passenger engines are now designed for boiler pressures of 185 lbs., while recent large freight engines have a working pressure of only 160 lbs. per sq. in. The heavy cost of boiler maintenance with high pressures and frequent failures of tubes and staybolts have had their result in movements favoring the lower pressures. Experience with reduced boiler pressure has been so favorable in this respect that the change is now well established and the loss in capacity has been made up by various improvements in the design of both engine and boiler.

A study of recent locomotive boilers reveals some variations in practice and some inconsistencies which are difficult to explain. When radically different designs of firebox are used for the same purpose, it is probable that one form is better than the other, but in the absence of exact experimental data it is difficult to prove it. If each of them furnishes sufficient steam for the engines when performing the service expected they are regarded as satisfactory, though a careful test might show one design more economical in fuel than the other, while its capacity may be less.

We shall consider only one prominent illustration of this, and that is the wavering practice in the use of combustion chambers, with tubes of moderate length in one lot of locomotives and straight tube sheets and very long tubes in another lot, when there is nothing particular in the service which should determine one or the other type of firebox. The combustion chamber was welcomed as a simple expedient for maintaining a moderate tube length in the very long boilers used where there are numerous coupled drivers. We were told that the front portion of a 20-ft. tube has little value as evaporating surface, and the larger area of firebox heating surface exposed to the direct effect of the hot

gases and to the radiant heat of the red hot fire bed more than made up for the slight loss of 2 or 3 ft. of the front tube end. Then, too, very positive claims are made for the advantage of larger firebox volume which the combustion chamber furnishes for the complete combustion of the hot gases, and we have published the results of tests which show a saving in coal consumption of 10 to 15 per cent. as a result of such construction.

In the design of the boilers for the Chesapeake & Ohio Mountain type passenger locomotive advantage was taken of these claims. These engines are required to haul passenger trains weighing 650 to 700 tons over mountain grades 80 ft. per mile at speeds of 20 to 25 miles per hour, and they are the largest and most powerful simple engines in one unit ever built. A boiler of maximum capacity was demanded, and it has a combustion chamber 42 in. long and tubes 19 ft. long; with this construction the locomotive has exceeded the required performance. Another locomotive intended for higher speeds—the experimental Pacific type, No. 50,000—has since been built for maximum capacity per unit of weight, and by careful design the weights of machinery have been kept as low as possible, so that the boiler might be enlarged without exceeding conservative wheel loads. Great care was taken in the design of this boiler, and its proportions may be taken as representing the latest and best ideas in regard to firebox and tube relations. In it we find a straight tube sheet and no combustion chamber and the tubes are 22 ft. long. The performance of this engine exceeds in capacity that of any other Pacific type engine, having developed 1 h. p. for each 121.4 lbs. weight of engine. It also shows a greater economy in fuel per indicated horsepower than other locomotives of this type and equal weight.

The railway manager who is ready to order passenger locomotives of maximum capacity and economy will naturally ask why it is that where these considerations were paramount in another case, the tubes are 3 ft. shorter and a long combustion chamber was used. It may also puzzle the engineer, for we have seen no explanation of these vagaries in boiler design in the most recent practice. It might be said that the Chesapeake & Ohio Mountain type locomotives were intended for slower service on heavy mountain grades and the question of speed has some influence on the design. This explanation fails when we find the largest locomotive boiler ever built—that for the Pennsylvania simple Mallet for slow mountain freight service—has tubes 24 ft. 8 $\frac{7}{8}$ in. long and no combustion chamber. This boiler is 104 in. in diameter at the throat sheet, and with the superheater has an equivalent heating surface of 8,000 sq. ft. The Pennsylvania has made experiments at its locomotive testing plant at Altoona with plain fireboxes and those with combustion chambers, to determine the relative value of firebox and tube heating surface; and, though the results of these tests have not been made public, we must conclude that the extremely long tubes in the new Mallet locomotive built for that road clearly indicate a preference for a design which excludes the combustion chamber. The boiler performance of this engine will be examined with special interest, for if it meets expectations as to economy and capacity we may conclude that for either passenger or freight service there is no economic limit to the length of locomotive tubes excepting those imposed by the deflection due to their weight and other questions apart from their function as heating surface.

We expect that something definite on the general subject here considered will be shown as the result of the extensive and important locomotive boiler tests now being conducted at Coatesville, Pa., under the direction of Dr. W. F. M. Goss. The first series of these tests concerns the determination of the efficiency of fireboxes of different construction independently of the tubes, and they include measurements of the relative evaporating capacity of a unit area of firebox heating surface as compared with the capacity of a unit area of tube heating surface. With this information at hand, the development of locomotive boiler design should proceed consistently and without the variations here noted which are now so difficult to explain.

THE NEW YORK, WESTCHESTER & BOSTON.

THE New York, Westchester & Boston, the construction of which is described elsewhere in this issue, is unique in that it is the first new electric line built in this country to first class steam railway standards. Physically, it is comparable to the electrified lines of the New York Central, the New Haven and the Pennsylvania. The project is particularly interesting for its traffic possibilities, and these cannot be accurately forecast. The road was originally promoted by independent interests, two separate companies, in fact, having obtained conflicting franchises. Four years ago the New York, New Haven & Hartford bought these companies. To a certain extent it did so in self-protection, as the territory to be served was one much of which was tributary to the New Haven's main line and its Harlem branch. The justification for the expenditure of the New Haven's money on the construction of the new road, however, does not by any means rest on this. At that time the New Haven had no intention of parting with the New York, Ontario & Western and a direct connection between that property and the New Haven's freight terminals at Harlem river would be of great advantage, particularly, for handling Ontario & Western coal. The refusal of the New York Public Service Commission recently to allow the transfer of the control of the Ontario & Western to the New York Central makes this possible connection as desirable as it was before. The Westchester line has no immediate plans at present for building north from White Plains. It may eventually build north to the Central New England to get its connection with the Ontario & Western, or it may reach the same point by trackage rights over the Harlem division of the New York Central. The lower part of the line may be given additional business if a line is built from White Plains northeast to a connection with the New Haven in the Berkshires, which will make a shorter route from this increasingly valuable territory than the present New Haven line down to South Norwalk, Conn., and thence to New York over the main line.

The more immediate traffic which the Westchester may expect is the suburban passenger traffic into New York and, in fact, it is at present planned to operate only passenger trains. The part of the line in the northern part of New York City runs through a territory which, though now hardly built up at all, is on the frontier of one of the most rapidly growing sections of the city. The population of the borough of the Bronx more than doubled between 1900 and 1910, and the population of Westchester county, in which that part of the line north of the city boundary is located, increased over 50 per cent. in the same period. The line reaches towns from which suburban business is now heavy, and when its southern terminal arrangements are completed it can expect to carry a large part of the passenger traffic which now moves over the New Haven and the New York Central into the Grand Central station at New York. The main terminal of the line is really the station at 180th street. This is a few blocks from the present terminus of the easterly branch of the Interborough Rapid Transit subway, and the latter is to build a connection into the Westchester's station, although there will be no track connection. The Westchester also runs south from this transfer station to a connection with the Harlem branch of the New Haven, over whose tracks it runs to the terminal at 132nd street. Here passengers will be interchanged with the Second and Third avenue elevated lines, which must ultimately be third tracked, so as to give a better service to the lower part of the city. Further extensions of New York subways into this general region are assured, so that the Westchester can ultimately send its passengers down into the city by at least three rapid transit routes.

The company's methods of handling its passengers, particularly the use of zone tickets which the passengers will give up at destination, so that no ticket collectors need be used on the trains, are novel and will be described in a later issue. These arrangements are typical of the attitude of the management in doing all it can to give the public good service and relieve them

of minor discomforts. Another innovation looking to this end is the distribution among all its station and train employees of booklets giving the names of all stations, the principal streets, with the name of the station nearest to each, the connecting trolley lines, residence parks, etc., the purpose being to help the employees to give the public accurately and courteously such information as it is likely to ask for. A management that starts with this idea of giving the public what it wants before the public even knows what it wants, much less demands it, has taken a long step toward getting generous support.

THE RAILWAY ACCIDENT SITUATION.

ON the initiative of F. C. Rice, chairman of its transportation committee, the American Railway Association, at its meeting in New York in May, adopted three resolutions regarding railway accidents. We present elsewhere a summary of the resolutions and also Mr. Rice's remarks in introducing them.

The association was justified in directing attention to three of the most important facts regarding the accident situation. As its resolutions set forth, first, a majority of the fatalities on American railways is due to trespassing on their property for which they are not responsible; second, a large majority of the remaining accidents is due not to defects of plant or equipment, but to shortcomings of the human element in operation, and cannot be prevented by the use of automatic safety devices, whether installed voluntarily or in obedience to legislation; third, the existing rules of operation would prevent most of these latter accidents if they were rigorously enforced and implicitly obeyed.

The statement of these facts suggests the remedies for most accidents. First, trespassing ought to be stopped by the compulsion of law. The fatalities due to this cause, outnumbering those from all other causes, are of all the most unnecessary and preventable. People must ride on trains and work on railways, but they don't have to steal rides on trains or walk on railway right of way. And when the public becomes as zealous in plucking the accident beam from its own eye as in trying to remove the mote from the railways', there will be a sweeping reduction in fatalities. In England any one except a railway servant who ventures on a right-of-way is promptly arrested and fined or jailed. In this country such action, whether against a citizen of the community or a hobo riding on a brakebeam, would be considered an outrage. This imbecile attitude of public and public authorities caused 14 people to be killed yesterday, 14 to be killed today, and will cause 14 to be killed tomorrow, and the next day, and the next, if the average of the last ten years is holding good. As the studies of fatalities to trespassers made by Frank V. Whiting, general claims attorney of the New York Central Lines, and by R. C. Richards, general claim agent of the Chicago & North Western, the results of which have been published in the *Railway Age Gazette*, show, a large majority of these people are working people and business people, just like those killed in trains. A public and public authorities that will year after year allow such a horrible slaughter to go on, and lift hardly a finger to stop it, act the part of contemptible hypocrites when they denounce and legislate about accidents due to other causes.

However, as Mr. Rice said, the initiative in reducing accidents ought to come mainly from the railway managers, for they know the conditions and remedies better than any other persons. It is quite true, as he stated, that existing rules of operation, based on the experience and worked out by the wisdom of the railway men of the United States, would, if enforced and obeyed, prevent most of the accidents not due to trespassing. But accidents continue simply because the rules are not enforced and obeyed; and before they will be enforced and obeyed, there must be developed in the personnel of the transportation business a very different spirit from the present one. We have often pointed out that many accidents are due to infractions by the employees of orders and rules of the companies. But, as we

also have said, that is not the whole story. While automatic devices will not alone remedy the situation, experience has demonstrated that block signals, and especially automatic signals, do increase safety; and their installation has not been carried forward as fast as it ought to have been. Furthermore, the railway managements cannot escape responsibility for many of the violations by employees of train and signaling rules. There is no question that in some cases the managements have so scheduled trains that it is almost impracticable for employees to run them as required, and at the same time obey the rules. In other cases, while this could be done it is difficult. It is not a thing wholly unknown for operating officers to wink at infractions of orders and rules committed by employees to get their trains over the road on time until an accident results and for the officers to then shield themselves behind the violated orders and rules.

Now, a rule that is not fit to be enforced is not fit to exist, and when accidents result from a practice on the part of the employees that has been winked at by their superiors, the railway management is more responsible than the employees are. The difficulties that a railway officer will meet who insists on trains making their schedules and on all rules and orders being at the same time implicitly obeyed, and who deals with an infraction of a rule which does not cause an accident in precisely the same way that he deals with one which does cause an accident, are apt to be very great. But that is the only policy that will ever stop most accidents. It may meet with resistance from employees' organizations at first. But if its carrying out be accompanied by a campaign of education which will bring home to employees the imperative need, for their protection as well as that of railway patrons, of better co-operation between managements and employees to promote safety, and of stricter administration of discipline in the cases of those employees who cannot otherwise be prevailed on to do their duty, the results are certain to be marked and beneficial.

It is to be hoped that the resolutions adopted by the association are but the forerunner of vigorous, persevering action. Mr. Rice did not exaggerate the danger to the railways in the present situation. The public and Congress, ignorant as to the causes of railway accidents, and misled by the leaders and legislative agents of the railway brotherhoods as to the proper remedies, seem disposed to try to regulate all the features of railway operations affecting safety except the human element, which is the most vital factor of all. To regulate all the phases of operation affecting safety would be to regulate almost every phase of operation whatever. This would involve transferring to public authorities as much control over operation as they now have over rates. Most of the regulation of operation that has thus far been adopted has been finely adapted to causing the railways trouble and expense, but hardly at all adapted to preventing accidents. The handling of the question of the transportation of explosives and other dangerous articles by the bureau established for that purpose by the American Railway Association has had excellent results. The men employed are highly competent, and they do not consider it their function merely to find fault with the railways or gather evidence on which to base prosecutions of them, but, rather, to adopt means which actually will prevent accidents. On the other hand, the investigations of and reports on accidents being made under the supervision of the Interstate Commerce Commission, under the provision of the safety appliances law and the accident law of 1910, are such as to reflect discredit on the regulating authorities and to contribute almost nothing to the solution of the accident problem. The wide difference between the character of the work of the Bureau of Explosives and of that of the commission's investigators and inspectors is an overwhelming argument for railways taking more vigorous concerted action than they have ever done to reduce accidents, both because the accidents ought to be reduced, and because if the railways don't reduce them they will invite further government interference of the character just mentioned.

NEW BOOKS.

Economics of Contracting. By Daniel J. Hauer, Eastern Editor of *The Contractor*. 6 in. x 9 in. 269 pages. Cloth binding. E. H. Baumgartner, Monadnock Block, Chicago. Price, \$2.50.

The amount of literature treating of the business or profession of contracting is not large, doubtless for the reason that the men engaged in contracting are in general not trained readers. They are apt to discount very heavily the knowledge gained from the experience of some author in favor of the experience they gain by their own successes and failures. No university courses in contracting have been offered, and it is usually considered a subject which cannot be thus taught. Many engineering graduates and many young men not technically trained are entering the field of contracting, however, with little knowledge of the details of the work they will do, expecting to learn it as the men now engaged in the work have learned it, "by hard knocks." For such young men the very detailed experience of Mr. Hauer as set forth in his book should be interesting and valuable. To a student the title of "economics" may suggest a broader and more scientific treatment of the subject than a reading of the book will reveal, but, as this class of readers will no doubt be numerically small, the title cannot be seriously objected to. The author states that the purpose of the book is to set forth the "how" of contracting, and in following out this purpose he covers details of the work as minutely and as widely separated as oiling harness and handling business correspondence. Some of the most interesting chapters treat on "Forms of Contract," "Construction Camps," "Contractor's Outfit and Plant," and the other chapters contain a great deal of matter regarding the organization and management of contracting companies.

Electric Traction for Railway Trains. By Edward P. Burch, consulting engineer. Cloth, 583 pages, 6 in. x 9 in., illustrated. Published by the McGraw-Hill Book Company, New York. Price, \$5.

There has been a demand for a book of this sort in the railway engineering field, both for the technical student and the practicing engineer. It is not presented in the nature of a popular treatise on the subject, but with the desire to satisfy the wants of the engineer. The first chapter is devoted to a resume of the history and the present status of electric traction, including tables presenting the general data of roads using electricity in America and Europe. The second chapter concerns the characteristics of modern steam locomotives, giving operating data and diagrams of some of the most recent power. The next two chapters consider the advantages of electric traction and the various systems available, citing the various railways using these systems. The following chapters consider the arrangement and design of the trains and locomotives in detail, giving technical descriptions of the direct current, the three-phase and the single phase locomotives. The way in which power of different kinds may be transmitted and developed at the power plant is considered. Tables are given with operation cost data and information about the equipment for different roads. Throughout the book references are made to articles in the standard engineering journals.

The Coal Trade. By Frederick E. Saward, Editor *Coal Trade Journal*, 20 Vesey street, New York. Price \$2.

The 1912 Coal Trade is the thirty-ninth annual handbook covering statistics and conditions in the coal trade. It is a handbook that is essential to those interested in the coal business, and is of value to railway men whose roads carry any considerable amount of coal. A good history of the trade, not only for the whole country, but for the important individual sections of the country in which coal is produced or marketed, is given, and the handbook also includes a great number of short studies on various subjects connected with coal which are very useful as references. The book might be compared to a newspaper almanac devoted, however, entirely to one subject. The value of such a handbook is affected very much indeed by the kind of index which accompanies it. The index of *The Coal Trade* seems to have been prepared conscientiously and fairly fully.

Letters to the Editor.

INSPECTION OF RAIL MANUFACTURE.

MONTREAL, May 27, 1912.

TO THE EDITOR OF THE RAILWAY AGE GAZETTE:

In your issue of May 10, pages 1030 and 1057, you refer to a method of increased inspection of rails, which you state has been devised and put into operation within the past two months by one of the rail inspection bureaus, by means of which the rail is followed through the process of manufacture by placing additional inspectors in the converting works, in the blooming mill and at the testing machine.

As a matter of history it may not be amiss to mention that in the early fall of 1911, in conjunction with Chief Engineer Ashby, Engineer of Maintenance of Way Moore, and others of my associates on the Lehigh Valley, I developed in connection with rail inspection on that road, a system by which, with a corps of ten inspectors, a definite record was kept of each operation throughout the manufacture and rolling of the steel, taking particular note of any unusual occurrences in the mills, night and day, and making record of the more important matters upon special printed forms.

From the above statement of facts, which are widely known today in railway circles, you will note that there is nothing novel in the plan which you state has been "devised and placed in operation within the last two months," since its essential features were devised by us last fall and have been in successful operation since that time. Evidently, however, you were not informed correctly as to the origin of the method, and as a matter of fairness to myself and my associates, I trust that equal publicity may be given to this statement in your next issue.

Another feature of our new system, but to which you did not refer, consists in following up the ingots in each heat and seeing that the ingot number in its proper order is stamped on each rail in addition to the heat number, so that any rail after being laid in track can be identified at any time. Six test-buts are taken from the tops of six ingots selected by us at random from each heat, and these are subjected to the drop test. In case of failure of one of the butts, the rails of the ingot (about five in number) are rejected, and in case of failure of the butts from two ingots the entire heat represented is rejected.

We devised our new system of rail inspection, because as a result of long critical study of the rail situation and of rail failures in service in many parts of the United States and of Canada it was clearly proved that in many instances the failure was due to a single defective ingot, and that the rails from other ingots in the same heat were of normal quality and gave good service. Thus, it was evidently desirable to develop a practicable system by means of which a defective ingot, if present, could be detected, and this conclusion naturally led to the adoption of the test by ingots, a plan which was proposed a number of years ago. The object of our new system, in a word, was to lessen the liability of the production of defective material, by means of careful oversight of the process of manufacture, and then to safeguard the quality still further by means of the "test-by-ingot system," so that there would be a far greater certainty of identifying defective material when present than under the ordinary method of test.

Our original specification proposed testing a butt from the top of every ingot, accepting or rejecting the rails of each ingot, but as the drop testing facilities at the mills were too slow to render the plan feasible without causing delay, the plan of testing six butts from each heat was finally adopted, and about 10,000 tons of rails were rolled under the new system of inspection back in the fall of 1911.

If the speed of operating the drop testing machines at the

mills is increased, as can readily be done, and with the addition possibly of another drop test machine, it should be quite possible to make the test entirely by ingots; that is to say, testing every ingot in a heat and rejecting only such ingots as might be found defective, unless, of course, a large proportion of the ingots in a given heat were of bad quality, in which case, as a matter of safety, the entire heat would be properly rejected. Such a plan would be to the advantage of the railways, since it would enable them to identify and reject defective material with far greater certainty than under the old system, and it would be of great benefit to the mills, since much good, serviceable material which would otherwise of necessity be rejected together with defective material, could under this system be proved to be of good quality and be safely accepted and placed in track.

ROBERT JOB,
Chemist, Lehigh Valley.

[While Mr. Job's statement is equally interesting and accurate, it nevertheless is true that the system of inspection described in the *Railway Age Gazette* of May 10, was new in respect to its introduction at so many mills for so many railways.—EDITOR.]

"THE NEWSPAPERS AND THE RAILWAYS."

NEW YORK, May 27, 1912.

TO THE EDITOR OF THE RAILWAY AGE GAZETTE:

Your confession in your editorial of May 25, entitled, "The Newspapers and the Railways," that you don't know what news is, nor the difference between news and advertising, is so shocking that someone should hasten to enlighten you. Having been for some years on the editorial staffs of daily papers in constant irritating contact with the business office's obsession on the subject of advertising perhaps I may as well get my hat into the ring.

It seems incredible that any one could squander his pennies all these years on those most conspicuous examples of erotic, neurotic and tommyrotic journalism, the New York evening papers, without discovering what news is; but since you haven't, you must needs be told that if its fit to print it isn't news. The only legitimate sources of news are the police station, the divorce courts and the imagination of the rewrite man.

Advertising is any information of public interest offered for publication by any one connected with a railway. It is a great comfort to be assured by Mr. Cobb that, thanks to the American Newspaper Publishers' Association, the editors of the country are on their guard against these railway space grabbers and are determined that no advertising shall pollute their news columns except at regular rates, with the usual discount for cash.

Something should be done about these railway press agents. If they would only bring us around some hot stuff of genuine interest to our readers, to-wit, the gentlemen who devote six afternoons a week to watching the baseball bulletin boards, the kind furnished by the press agents of prize fighters and leg shows, we might give them the regulation daily allowance of two pages of free space. But when they try to work us for a few lines about an educational train to teach farmers how to make more money by increasing their crops, or something of that sort, why, it is going a little too far to ask publishers to help the game along.

It is a peculiar thing about railway advertising that it always helps others before it helps the railways and helps them more than it helps the railways.

Where would the west be but for the railways? The railways were the pioneers. They did not stop with furnishing transportation, but went ahead and created traffic by the unstinted use of money to develop the country. Remember how the Santa Fe boosted Kansas? How a single detachment of immigrants secured through the exclusive efforts of the Santa Fe consisted of 1,900 souls with \$2,250,000 gold in their jeans? That was only a sample of many similar instances. But for the railways there might be a scalp dance tonight on the spot where the *Freeport Journal* is now published; and Manager Cobb, if present at all,

would be there as the central attraction in a barbecue. The same sort of development work in which the state and its citizens profit first is still continued by the railways. In the seven north-west states in which two railways are spending half a million dollars a year in development and exploitation work the population increased 37 per cent. in the last decade, as compared with an average of 21 per cent. for the rest of the country.

And where do you think the resorts of California and Colorado would be but for the persistent and lavish exploitation of them by the railways? Yet the tourists who frequent them spend many times as much on hotel bills and incidentals as they do on railway fares. All this helps to support the whole community, including the newspapers. For every cent the railways get in returns from the advertising they do, other folk get a dollar, and they get the dollar first.

Talk about biting the hand that feeds you!

No wonder the railway doesn't "reciprocate" every time Manager Cobb gives it a free advertisement by printing its name in an account of an accident! Didn't he help elect the reformers who legislated the pass out of existence? The railways used to "reciprocate" to the extent of 15 per cent. of their passenger traffic. Even at that some of them managed to pay dividends, while, as for the rest of us, we made money so fast we couldn't stop to count it. Then a Great Noise was heard in the land. It was the sound of preparation for a third term. As the easiest way to acquire popularity and, hence, votes, it swatted the railways. The rest of us came in strong on the chorus. Since then we have had plenty of time to wear out our old clothes.

Mr. Cobb is unduly alarmed about railway press agents. As a matter of fact the railway press agent is a joke, and the efforts of the railways to utilize his services is a three-act farce. One tried to keep me from getting a perfectly innocuous story about his road. Another has never responded to various requests to furnish information. I never knew him to volunteer information to any one. Even those highly paid space grabbers, the general advertising agents, are but little better. I wrote a lot of them for information you would suppose they would be tickled to death to have published. How many do you suppose even answered my letters? One in nine!

No, indeed; the trouble with the railways is not that they are space grabbers. Most railway officers are courteous, long-suffering gentlemen when you get 'em cornered where you can extract information with forceps; but they lack the gumption to make a perfectly proper use of legitimate opportunities to obtain publicity for matters of prime importance to the community at large and of incidental advantage to the railways.

When Mr. Cobb once finds out on which side his bread is buttered he will print all the stuff the railway space grabbers send him and yell for more.

CHARLES FREDERICK CARTER.

TOPEKA, Kan., May 27, 1912.

TO THE EDITOR OF THE RAILWAY AGE GAZETTE:

I have read with interest your editorial and the letter of N. Y. Cobb of the *Freeport* (Ill.) *Journal* on the relations between the railways and the newspapers. As a reporter who has wormed news out of the railway men for the last few years, I would like to offer a little evidence on the subject.

I do not agree with Mr. Cobb. It has been my experience that railway officials have realized that subsidized news does not pay. It is true that railways are sending out many columns of "free advertising" through their press agents, but, on the other hand, I believe they are furnishing the newspapers with good live news stuff—material that never was given out before because of reporters who did not know how to write it.

Every day a newspaper man will hear a railway official complain: "I wouldn't mind giving out a story now and then if the reporters wouldn't 'ball it up.' They don't pay attention to any of the details we give them—just slide the stories out of their

typewriters and try to attract the attention of the city editor with a sensational feature."

The railways realize that the public is demanding a certain amount of publicity, and they have selected men to write out the details for them. The newspapers don't have to print it as written. But the railways do ask that they use the details as sent out by the publicity agents.

Mr. Cobb says his division officers hold up news on wrecks—and he judges all railway men by the reports given him by his reporters. Here in Topeka two big railways have headquarters offices—the Santa Fe and the Rock Island. The details of a wreck are given out as cheerfully and honestly as an item concerning the luxury of their California limiteds.

Here is the way western railway officers figure it—and it is a philosophical way of gauging the public mind:

A newspaper hears of a bad wreck. The railway officials refuse to give the details. The paper hears more rumors. Still the officials are silent. Press time is nearing. Opposition papers are crowding the field. What is there to do? Print the rumors, of course. Display the story on the front page under a big headline. More rumors, more headlines, more sickening "reported" details. "Whew!" says the reader, "That was a terrible wreck on the Santa Fe today, wasn't it?" That is the old-fashioned spirit in railroading.

Now suppose the officers give out all the details. The newspaper publishes everything. It's all over in one or two issues. The next day Taft or Teddy claim Ohio or New Jersey, or the entire nomination, and the public forgets about the wreck. If the officers refused to give out the news, the newspapers would print rumors, reports, experiences and corrections for days—and the reading public would be confronted every morning and evening with the "terrible wreck."

Every day I receive publicity agents' letters and "stuff" at my desk. I can say honestly that four-fifths of it is good, readable matter; very little "bunk." The railways in a great many cases choose newspaper men to handle their publicity agency—and newspaper men are not disposed to distribute poor stuff. They know better than to peddle raw free advertising.

It is my observation that the newspapers themselves publish more rot about the railways than the railways ever will be able to have printed through their publicity departments.

Of course, railway officers do not tell their business plans to newspaper reporters. Suppose an officer informed the newspaper that his road intended to build shops immediately on a certain tract of ground—before the ground was purchased. The value of the land would rise like a toadstool in the night.

I think a large part of the trouble between the newspapers and the railways in the past has been due to the reporters—the representatives of the newspapers. Like everyone else they have been raised to believe that the railway officials are red dragons and that railway news has to be procured with dynamite and abuse.

I think this sentence in your editorial just about covers the situation: "Newspaper men have much to learn about the railway business and railway men have much to learn about the newspaper business before they will always give each other a fair deal."

ARTHUR J. CARRUTH, JR.,
Topeka State Journal.

They talk of the "growing" traffic of the Siberian railway. It seems that in 1910 the number of passengers from places outside of Russia who passed over the line was 5,022, who paid fares amounting to nearly \$650,000. This is equivalent to less than seven persons each way daily and to \$162 per mile of railway—which will not go far towards supporting it. Yet this is an increase of 36½ per cent. in the number of passengers and to 38 per cent. in the earnings, compared with 1909. Evidently it is the local traffic that supports the road, so far as it is supported.

THE NEW YORK, WESTCHESTER & BOSTON.

Construction of the New York, New Haven & Hartford New High Speed Electric Line Running North from New York City.

BY GILBERT G. BROWNE.

The New York, Westchester & Boston Railway, part of which was put in operation last week, is a four-track electric line owned by the New York, New Haven & Hartford. It runs from White Plains, N. Y., to 174th street, New York City, where it joins the Harlem branch of the New York, New Haven & Hartford, and when completed will be operated as a part of that system. Beside connecting with the Harlem branch at 174th street, interchange of traffic will be made with the West Farms branch of the Interborough Rapid Transit subway at 180th street and Morris Park avenue. There is also a branch connecting with the New Haven main line at New Rochelle.

The proposition of building a line along the general location of the New York, Westchester & Boston is not new. The original company was formed many years ago, and right-of-way was purchased from time to time. About ten years ago actual construction work was begun on the southern end of the road, but the company was unable to finance the project and was forced to give it up. Later, control of the road was bought by the New York, New Haven & Hartford, which company relocated the line, and commenced construction work in 1908.

Throughout its entire length, the line has been built to conform with the main line standard of the New Haven. The rail is 100-lb. section and creosoted ties with 22 in. of ballast are used. All bridges are of concrete and steel, and have been designed to stand heavy traffic at high speed. They are all waterproofed. The road will be operated by single phase current as a part of the New Haven electrical system, and multiple-unit trains will furnish the passenger service. There will be no freight service for the present. It is four-tracked from 174th street to Mount Vernon, where two tracks diverge to White Plains, and two to New Rochelle. The entire line will be fenced in private right-of-way, protected with block signals and free from grade crossings.

The maximum grade is 1.0 per cent., except for one stretch of 2.5 per cent. from 174th street, the junction with the Harlem branch tracks, to the south end of the West Farms Viaduct at 177th street. The adjustment of alignment and grade at this point was one of the most difficult problems which the engineers encountered and the present location was adopted only after trying and discarding many others. Certain fixed street grades over which the tracks must have sufficient clearance, certain other points, like the junction point, at which the elevation was fixed, added to difficulties in obtaining right-of-way, all served to confine the possible solutions within narrow limits, and made the task one not so much of choosing the best, but of avoiding the worst. It was finally decided to carry the tracks over 177th street, and this extraordinary grade was necessary to give the tracks sufficient clearance. The curvature is limited to 4 degs., except for one 6-deg. curve through Mount Vernon.

From the Harlem river to about 174th street the road will be operated over the tracks of the Harlem River branch, which will be completed so as to be available for such operation under a contract granting perpetual rights to the New York, Westchester & Boston. Just north of the present West Farms station on the joint tracks, the road diverges from the Harlem, and after crossing upper West Farms on a four-track steel viaduct 2,000 ft. in length, makes its first independent stop in the transfer station at 180th street, near the eastern border of Bronx Park. The plans for this station call for a steel and concrete structure, 200 ft. wide by 540 ft. in length. Half a mile north the road crosses over the Morris Park viaduct. This viaduct is of reinforced concrete 400 ft. long, and varying in height from 20 to 30 ft. It is very carefully designed architecturally, to secure a



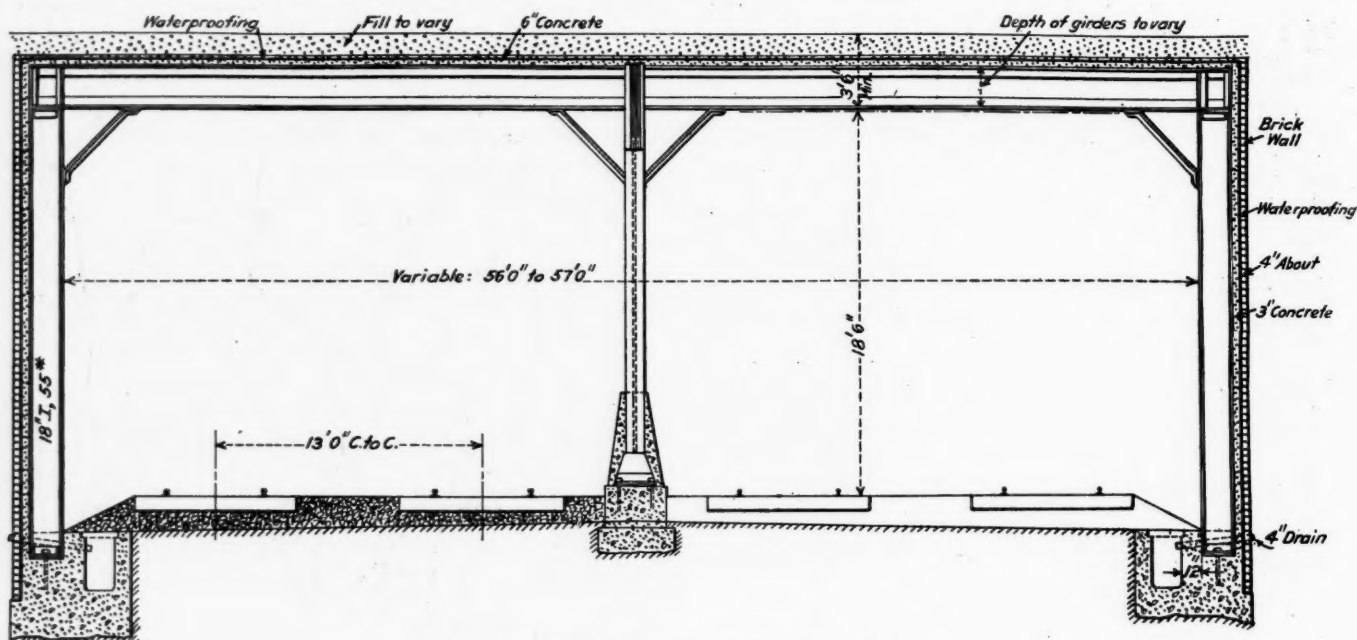
New York, Westchester & Boston.

pleasing effect, so that the value of the surrounding property for residential purposes might not be impaired. The walls rise several feet above the track and have been finished with great care to add as much as possible to the appearance of the structure. All exposed surfaces are dense and smooth, and all exposed edges chamfered.

Immediately north is the Pelham Park subway, three quarters

top were filled in and the whole then waterproofed. It was then back-filled to the original grade.

The interesting problem connected with the building of this subway was that of adjusting the grade and section of roof members to the conditions imposed by the varying levels of the streets which cross the subway. The clearance from base of rail to under side of roof is 18 ft. 6 in. Where the level of the



Typical Cross-Section of Pelham Park Subway.

of a mile long. The company was forced to build this subway, instead of leaving an open cut, in order to obtain the right-of-way. After the cut was made, concrete piers were sunk and on these piers the steel framework was built. The general type of steel work is shown in the accompanying photograph and cross section. After the erection of the steel, the side walls and the

street was higher than the average, the difference was taken care of partly by varying the gradient and partly by making a deeper and therefore more economic section of the I-beams in the roof structure. As few variations in section were made as consistent with economy so as to facilitate fabrication and erection. Another problem about which there was considerable dis-



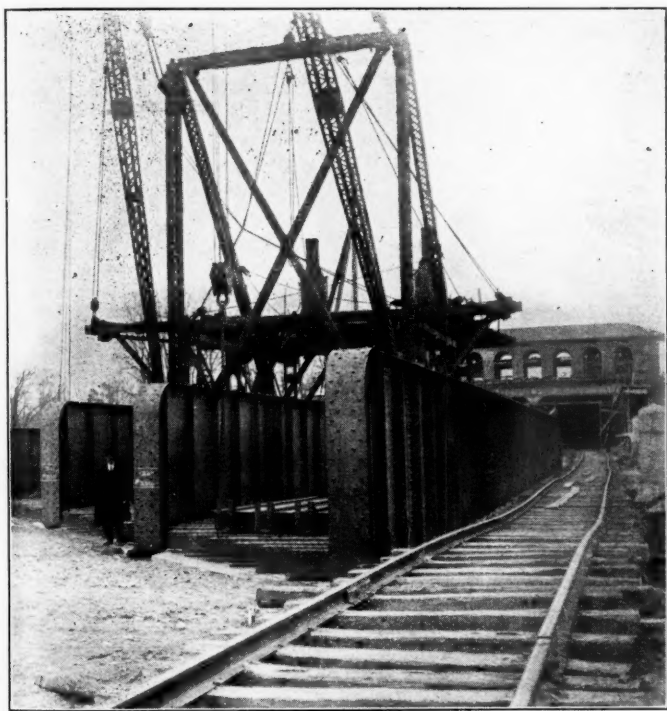
Steel Work for Pelham Park Subway of New York, Westchester & Boston.



Subway with Brick and Concrete Work Completed and Back Fill Under Way.

cussion was as to the footings of the columns of the sidewalks. The base of the column rests on the same level as the floor of the subway. Some 3 in. from the near side of the column base a concrete wall 9 in. thick and 12 in. high was made, the intention being after the walls were in place to fill in the space between the column bases and this wall with concrete. There was some question as to whether this, combined with friction, would be sufficient to withstand the earth thrust. After the roof members and side curtain walls were in place, there was a heavy slide of material from the sides of the cut at one point, which forced the whole steel structure out of place, driving the bases of the columns up against the 9 in. wall, which held. This practical test settled any doubts. In general, to resist side pressure the whole subway structure acts as a unit, the floor system and the roof system dividing the horizontal thrust. At the station in the southerly end of the subway, and at the one in the middle, the stairway wells make it impossible to continue the integrity of the roof system, so at these points concrete retaining walls on each side of the subway are put in to take care of the earth pressure. The waterproofing is four-ply Barrett specification.

From this point to the East Sixth street station at Mount

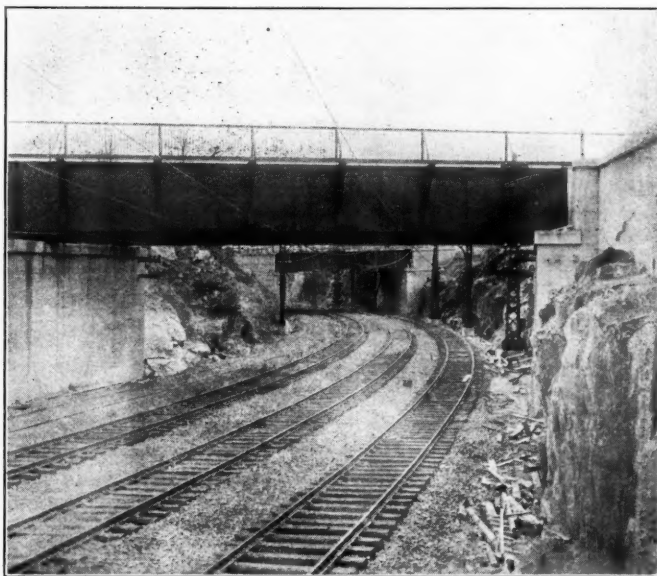


Bridge Near Southern Portal of Pelham Park Subway.

Vernon there is comparatively light work, most of it embankment. East Sixth street marks the southern end of the cut through Mount Vernon. This cut is from 20 to 40 ft. deep, and is almost solid rock throughout. From the northern end of this cut the tracks run out upon the Columbus avenue viaduct. This viaduct is about 400 ft. in length, including the through girder bridge of 104 ft. span over the main line of the New York, New Haven & Hartford R. R. The main girders are supported by towers resting on concrete pedestals; these towers are made up of 10-ft. girders supporting the main girders and resting upon H columns. In this structure each end of every longitudinal girder rests on a column and never on a transverse girder. This results in what at first sight appears a peculiar arrangement of columns in some places, particularly near the crossing of the New Haven tracks and the streets just north of the tracks. The columns are built up of $\frac{3}{4}$ in. plates and 3 in. single-bars, and their bases rest on $\frac{3}{4}$ in. bed-plates 48 in. x 56 in.

The girders used in the span over the New Haven tracks are exceptionally heavy, those in the center supporting two tracks weighing 96 tons apiece, and the outside ones, 54 tons. The

distance between bearings is 104 ft. and the depth of the girders 10 ft. 6 in. The erection of this span was most interesting. The viaduct was built from the north end, as there was no point to the southward at which the steel could be brought in economically. The traveler used in the erection of the viaduct could handle the outside, 54-ton, girders alone, but not the three heavy girders. After the abutments and piers were built, the steel



Cut Through Mount Vernon.

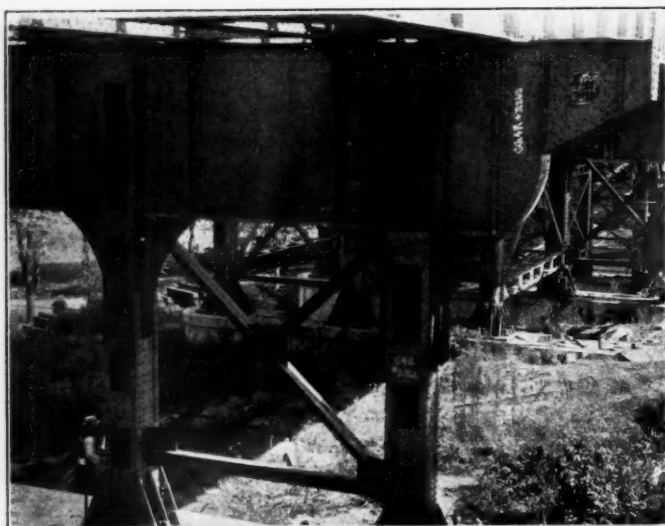
work was erected up to the abutment north of the New Haven tracks. The two light girders were then erected by the traveler, one at a time, close together in a temporary position on about the center line of the bridge, the girders being lifted from freight cars on the New Haven tracks below, as shown in the accompanying photograph. A temporary floor system was then put on these girders and a track laid. A derrick car was then run under the traveler and over this temporary track to the south abutment, from which position it erected the first span of the viaduct south



Typical Concrete Bridge.

of the abutment. Tracks were laid on this span and the derrick car run out on it (having first, of course, to be run back over the traveler and to the nearest point where it could be turned around so as to face the work on the long span over the New Haven tracks). Skids, consisting of rails on grillage, were then put on the two abutments. Two of the heavy girders were then lifted up from the New Haven tracks, each being handled by the

derrick car and the traveler working together. These girders were put in temporary positions on the skids at each side of the light girders. The temporary track and floor system under the light girders was then removed and these girders were lifted out to their final positions. The two heavy girders were then moved on the skids to their final positions, which could not have



Typical Tower of Columbus Avenue Viaduct.

been done before because of the position of the temporary track; and the third girder was lifted direct to its final position.

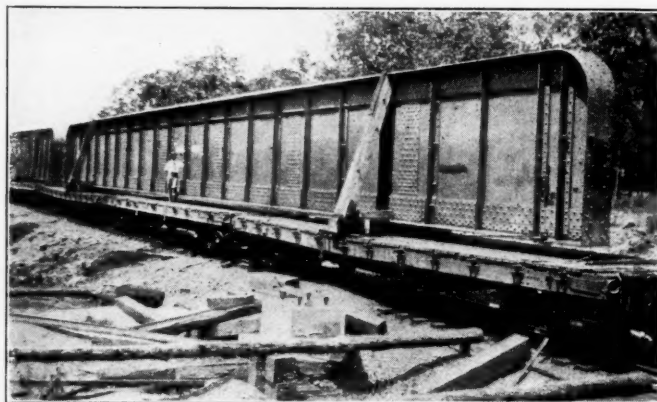
A few hundred yards north of this viaduct is the junction point where the tracks diverge, two running east through New Rochelle to the New Haven main line, and two extending north through Eastchester, New Rochelle and Scarsdale to White Plains. Immediately upon leaving the junction the former cross the Hutchinson river on a steel concrete floored viaduct 700 ft. long. The general type of construction of this viaduct is very similar to that of the Columbus avenue viaduct. At Fifth avenue, North Pelham, is a large concrete arch bridge which carries the tracks over the avenue below. The structure was designed to be a station also, and the combination is very effective. Between the station and Webster avenue, half a mile north, there is considerable heavy cutting, and from Webster avenue the road drops down for nearly a mile on a 1 per cent. grade to the junction with the New Haven main line.

The White Plains branch extends northward after leaving the

junction point and runs over a 30-ft. fill for several hundred feet before it also crosses the Hutchinson river. This fill, while not very large, is mostly earth and has given much trouble from settling, particularly when concrete piers for the catenary bridges, which carry the electric contact wires, were being set. The bridge over the Hutchinson river is a single span deck girder, 105 ft. long. Except for the cut at Wykagyl station and the Essex road crossing, there is comparatively little heavy work between this point and the heavy cut south of Quaker Ridge station.

At Heathcote, a mile north, the site of the station was at the intersection of Heathcote road and Palmer avenue, all upon the same grade. Both roads were therefore raised for several hundred feet back from the station and are now carried over the tracks on steel girder bridges.

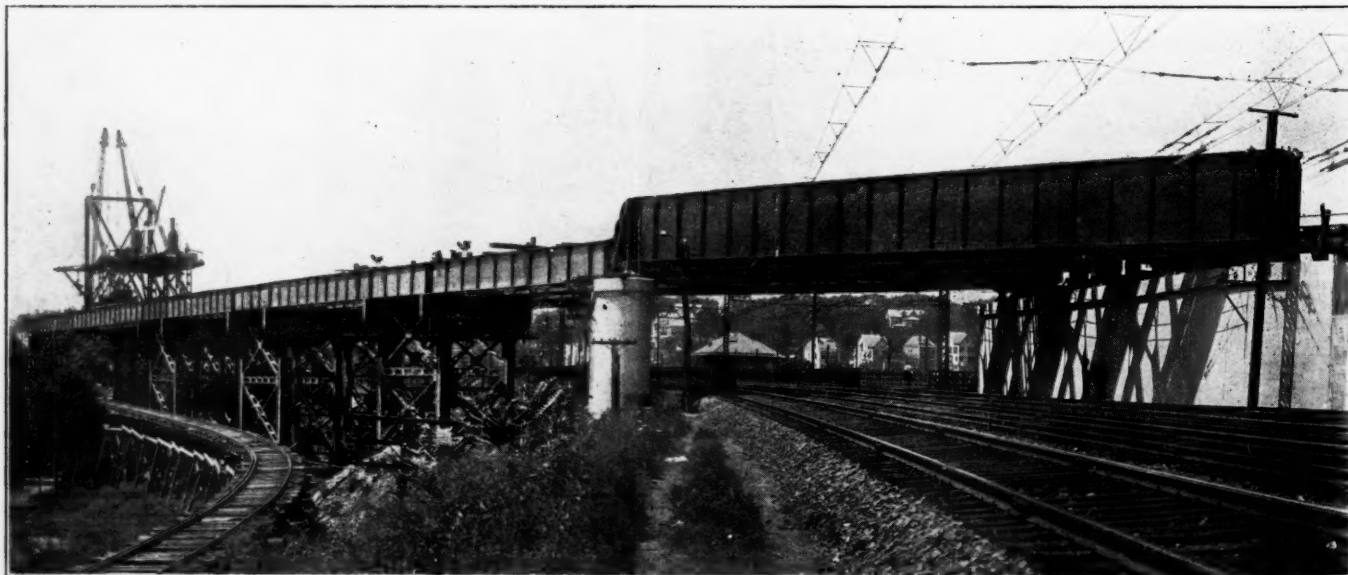
Norton avenue, which crosses the line half a mile from here, marks the southern end of a solid rock cut, less than 500 ft. long, but over which the company has had to build three bridges for street crossings. At Mamaroneck avenue a tunnel section is used under the surface car tracks. The Mamaroneck avenue cut, over half a mile in length, is the longest on the White Plains branch, and furnished much of the material for the great



Heavy Girders Used in Span Over New Haven Tracks.

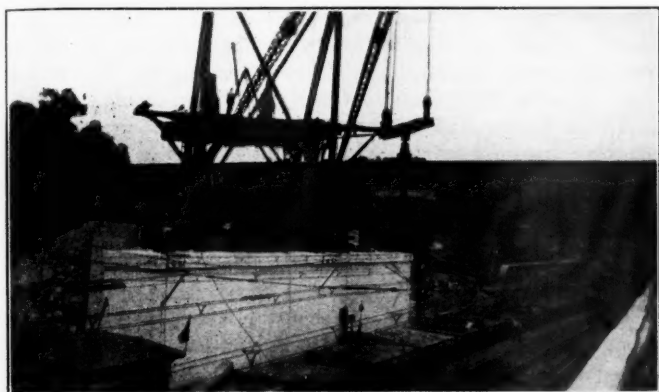
fill just north of it, which marks the White Plains station, the terminal of the line. Just before leaving the cut, the two tracks are increased to four. The two inside tracks are carried on a slightly rising grade to enable them to be carried on over the city when the Westchester Northern is completed. The outside tracks descend to the station and yards.

The system of electrification used on the New York, West-



Columbus Avenue Viaduct, Looking West; New York, Westchester & Boston.

chester & Boston is the same as—in fact, a part of—the general New York, New Haven & Hartford system; namely, a single-phase current of 11,000 volts on the contact wire, and a system frequency of 25 cycles. In adopting the voltage of 11,000 on the contact wire, the New Haven road has planned with the idea of permitting the operation of any adjacent company's equipment upon its own lines, or vice versa. This voltage is recommended



Raising Light Girder to Temporary Position in Span Over New Haven Tracks.

as a minimum potential, it being recognized that there is no objection to a higher voltage on other lines individual to themselves where transmission economy can be obtained by the use of a higher voltage.

The method of suspension of the contact wires for the New York, Westchester & Boston is quite different, however, from that now in use upon the New Haven main line, and shows the advance in catenary suspension design since the latter was erected several years ago. The wires are strung in sections between



Hutchinson River Viaduct.

"anchor" bridges, situated about two miles apart, which take the entire strain from these wires in the direction parallel to the track. These anchor bridges are of heavy construction, 42 ft. in height to top of towers, and 61 ft. between centers of side frames. Between these bridges at intervals, which are normally 300 ft. but liable to change to meet special conditions, are the catenary bridges which support the contact wires and hold it in

its proper position with respect to the track which it serves. They are of lighter construction than the anchor bridges, for there is no strain upon them, save from the weight of suspension wires, and wind pressure. The truss is supported by latticed posts, 31 ft. in height, and surmounted by towers with cross arms. The arms are so arranged as to carry feeder and signal wires, two on each arm. Seventy-five feet each side of the catenary bridge 3-in. I-beams, running across the four tracks, are hung from the $\frac{7}{8}$ -in. main steel messenger strands; and on the beams are installed the suspension insulators. The lower insulators hold the track messenger, $\frac{5}{8}$ -in. steel strand, to which is pendant, by means of hangers, a copper trolley and a steel contact wire below. There is practically no corrosion of the steel wire, for it is constantly covered by a film of grease due to a generous amount of this material being placed upon the pantagraph shoe of the cars. The steel wire is suspended from the conducting copper wire by means of metallic clips which fit very tightly into V-shaped grooves in the two wires, and afford a perfect connection between them.

In all cases, the masonry work has been completed first, and often before any earth work was done. Concrete was used throughout, not only in retaining walls, abutments, etc., but also in highway crossings, viaducts and stations. All exposed surfaces have been finished very carefully, and the general design has been so well planned that the masonry work is one of the most effective features of the road.

For embankments, temporary wooden trestling was usually employed on work of any considerable size. The great majority of fills are of rock, the only large earth fill being on the White Plains branch just north of the junction point.

The work has been carried out under the direction of J. L. Crider, chief engineer, and E. J. Langford, principal assistant engineer. The Columbus avenue and Hutchinson river viaducts were erected by the American Bridge Company, under the direction of A. H. Rhett, structural engineer of the railway company. The general contracting work from White Plains to the junction with the New Rochelle branch was done by the Henry Steers Company, and by Murray & Gilbert; from this point through Mount Vernon by Lathrop & Shea; from this point to New York by the O'Brien Construction Company.

The northern portion of the Trans-Persian railway will probably be built from Baku via Aliat and Astara to Yezd, but there is much uncertainty as to its further course. The two routes spoken of are from Yezd to Kerman and thence to Guadur, and from Yezd to Guadur by way of Bunder Abbas. Via Kerman the length of the line from Baku to Karachi is estimated at 1,994 miles, while the deflection to Bunder Abbas would increase the total to 2,056 miles. The entire cost of the line from Aliat to Karachi would be approximately \$172,400,000 via Kerman and \$177,929,000 via Bunder Abbas. The portion of the line from Guadur to Karachi would be coastal and almost unproductive. The gross receipts would amount to \$8,547 per mile, except in certain portions of the coast section where they will be somewhat less, and the operating expenses would amount to 70 per cent. of the gross receipts. It is estimated that there will be an annual deficit of about \$2,500,000 in case either route should be chosen, but it is hoped that this estimated deficit would be wiped out by subsidies from the Russian and Indian railways based on those allowed under the Indian branch railway terms, namely amounts equal to the net earnings of interchange traffic. One of the chief points remaining to be settled is where the break of gage demanded by the British government, from the Russian gage of 5 ft. to the Indian of 5 ft. 6 in. shall be. The Russian government demands that this should be at the border of Baluchistan; the British government desires that it should be at the point where the line enters the British sphere of influence in Persia. Even if the British carry their point, it would seem that India will be largely cut off from participation in the trade of the so-called neutral zone of Persia.

REPORT ON HOOSAC TUNNEL COLLISION.

The Board of Railroad Commissioners of Massachusetts, F. J. Macleod, G. W. Bishop and Clinton White, have made a report on the rear collision which occurred on the Boston & Maine in the Hoosac tunnel near North Adams, Mass., February 20, last (reported in the *Railway Age Gazette* of February 23, p. 350, and March 1, p. 395), and have sent the report to the legislature in response to a special order of that body asking whether the reduction in the number of employees of the railway had been one of the causes of the collision, and also whether it is safe and expedient to allow more than one train, traveling in the same direction, to be in the tunnel at the same time. As to a reduction in the number of employees contributing to the collision, the board briefly states that no evidence was presented which would warrant such a conclusion. The board had the assistance of Professor W. L. Puffer, an electrical engineer. We omit details which have already been laid before our readers and pass to the conclusions of the commissioners.

The tunnel is $4\frac{3}{4}$ miles long, and was opened in 1875. The electrified section of the road is eight miles long. Each track in the tunnel is divided into three block sections, each end section extending a little way out of the tunnel. Eastbound, the first block is 8,013 ft. long, the second, 8,031 ft., and the third, 9,600 ft. The setting point for the automatic block signals is about 200 ft. in the rear of the signal so that the engineman sees the signal change from clear to stop as he passes it. At the setting point there is a white light, fixed to the wall of the tunnel. The signals are "light signals." Each one has a red and a green light for the home indications, and a yellow and a green for the distant indications. The freight which was delayed had 37 cars, and when it broke in two, about a half hour was taken to recouple the train. During this half hour the steam engine of the train emitted some smoke and gas, and the commissioners think that this may have obscured, or partly obscured, the tail lights of the freight from the view of the motorman in charge of the passenger train. After coupling up, the freight proceeded, and was stopped by the block signal outside the tunnel while the rear end of the train was still about 1,200 ft. within the tunnel. The collision occurred a few seconds after this second stop.

The passenger train picked up the freight flagman and went along slowly; but after passing the signal at the entrance of the block which was occupied by the freight train, increased its speed, and was running at an estimated rate of 20 or 30 miles an hour when it struck the freight. From the distances given it appears that the freight caboose was about $1\frac{1}{2}$ miles ahead of this signal. Whether this increase in speed was due simply to the fall in the grade or to this, combined with the use of power, or was moderated by the application of brakes, does not appear. All of the men on the electric locomotive were killed in the collision. The report indicates that the man, or men, in charge of the electric motor knowingly increased the speed. The engineman of the passenger steam engine, immediately behind the electric motor, testified that he put his head out of the cab window and saw the block signal. He says that he looked ahead and saw it showing red and yellow; that the lights changed to "double green" (both indicating all right) and that on seeing this change he called out "double green." The three men in the cab with him (his fireman, an engineman learning the road, and a freight brakeman who had been picked up at Williamstown) testified that they heard the signal thus announced.

There being no switch in that block section, the distant and home signals normally could not change to green at the same time; for the train, proceeding through the blocks, could not clear the second block until an appreciable time after clearing the first. The commissioners hold, however, that as at interlockings, it is normal for a home and a distant on the same post to clear at the same time, it is unreasonable to expect an engineman,

every time he sees a signal, to make a special deduction based on the varying conditions in different blocks. They find confirmation of this opinion in the testimony of other enginemen, who say that in this tunnel case they should have felt free to proceed on seeing both lights change to green.

The corroboration of the passenger engineman's testimony by his three companions in the cab, and the fact that the men in charge of the electric motor increased their speed, leads the commissioners to conclude that probably that signal did show "double green"; this notwithstanding that the officers of the road contended that such an abnormal movement was impossible. The road claimed that the passenger engineman must have been mistaken. Professor Puffer has defined two theoretical abnormal conditions which would result in causing the supposed false indication. There is no evidence to show that these conditions existed in this case, nor have they been artificially produced. The inspectors of the board have known of false clear automatic signals outside of the tunnel. There have been no complaints of such failure in the electric zone, but since the collision, evidence has been obtained that there have been cases where the signals in the tunnel have not worked properly (meaning, presumably false clear indications).

The board holds that these automatic signals are as reliable and trustworthy as any which are available; but all signal devices "have failed at times to work properly." This system "offers as nearly an absolute guarantee of safety as it has been possible up to this time to devise by human agency."

When the tunnel was opened (single track) no two trains were allowed within it at the same time. On the completion of the second track, trains were allowed to meet in the tunnel, but not to follow each other. Later the manual block system was introduced, with a station at the central shaft; but many years prior to the electrification of the tunnel, the central shaft station was abandoned and each track was worked as a single five-mile block. When the tunnel was electrified each track was divided into three blocks.

The electrification of the tunnel was a very commendable undertaking, but the full benefits will not be realized until steam locomotives are kept out completely. To exclude them now would be very costly; to lengthen the electrified zone so as to make it economical, would also be costly; but it is desirable that the Boston & Maine proceed as soon as practicable to make a study of the situation, with a view to extending the electrified zone or adopting some other means to keep the steam engines out. Until this is done, the commission orders that the three block sections be made absolute, no permissive operation being allowed except on the order of some officer of the road specially authorized. It is recommended that each passenger train in the tunnel have the exclusive use of its track—that is to say, passenger trains should be kept three blocks behind preceding trains, and should not be followed by any train within three blocks. And in view of the difficulty of estimating speeds in the tunnel, the electric locomotives should be equipped with speed indicators.

Five Chilean government lines are to be completed and opened to traffic in 1912. During the year 8,500 persons were employed on the several works. Owing to a shortage of funds work is not to be pushed so hard on the government railways during 1912. More attention is being devoted to equipping the lines now constructed. It is estimated that 240 engines and 2,500 cars will be needed within the next year to handle the traffic.

There has been a good deal of talk of a tunnel under the Caucasus, which would give Russia a more direct access to its provinces south of the mountains, which are now reached by the Black Sea. A commission of experts has reported that the tunnel would be practicable—and would be $15\frac{1}{4}$ miles long. The traffic through such a tunnel would be unimportant, and Russia is poor. We may guess, therefore, that it will be a long time before this tunnel is built.

USE OF FORM 19 FOR ALL TRAIN ORDERS.

Discussion from Several Correspondents as to Advisability
of Never Requiring Signature of Conductor or Engineman.

The proposition advanced by J. P. Finan, of the Atchison, Topeka & Santa Fe, Needles, Cal., to use form 19 of the American Railway Association (not requiring the signature of conductor or engineman) for all train orders, abandoning the use of form 31, on which orders cannot be made "complete" without the signature of one or both of the men in charge of the train was printed in the *Railway Age Gazette* of March 8, last. Letters from railway officers, agreeing with or criticizing the views presented were given in our issues of March 15, March 22 and April 5. The communications on this subject which have been received since April 5 are too numerous and too long to be printed in full and, therefore, we give, somewhat abridged, the essential portions of those communications, omitting repetitions so far as practicable.

Mr. Finan, following his first communication, made a somewhat careful examination of the quarterly accident bulletins of the Interstate Commerce Commission, and from a study of these for four years he offers the following comments on the causes of collisions found in that record; and at the same time answers some of the criticisms of his proposal. He says:

Take the case where an operator held a 31 order for a train, the train order signal showing clear. The train gets by the office. Is it not fair to assume that if the order was on a 19 form, the operator would have been out on the platform trying to make the delivery and would have noticed his train order signal improperly displayed and been in position to have given a hand signal?

Take the cases where collisions were caused by operators getting outside and handing up 19 orders, giving additional rights and at the same time overlooking a 31 order which restricts the rights of the train, leaving the 31 order on the table in the office. With the 19 order system in vogue, the operator would be required to ask the dispatcher to clear the train with orders No. and and in event of the operator overlooking one of the orders, the dispatcher would prompt him about it.

Take the collisions caused by the common error [misconduct] of telegraph operators signing the conductor's name to four orders, then delivering to the conductor only three. If the four orders had been on 19 form, the operator would have asked to clear the train with the four orders, giving the numbers; after having recorded them on his clearance card he would get from the dispatcher his O. K. Then if the operator only gave the conductor three orders, with four numbers on the clearance card, the conductor would have inquired regarding the other order.

These are a few samples of grievous errors picked from the Interstate Commerce Commission Accident Bulletins covering the past four years. These are cases where we claim the 19 order would have prevented several collisions. Can anyone imagine a case where the 19 order would be the means of causing a collision? If so, I for one would be pleased to have an example. If no such cases can be cited, then why not admit that the 19 order is a safer means handling trains than the 31 order?

Train and enginemen will obey a 19 order just the same as they would a 31 order, and they will not forget to fulfill one more than the other—is it not reasonable to assume that the operator has a better chance to get the order into the hands of the men who are to execute it by being out upon the platform as the train is passing his office than to sit in his office and wait for the conductor to come in? One has only to read the Interstate Commerce statistics with an impartial eye to arrive at such a conclusion.

For the benefit of the author of the article from the N. Y. N. H. & H. (*Railway Age Gazette*, March 22, page 675), I wish to say that, under the method which governs the 19 order system, the dispatcher, when he restricts a train with a 19 order, has just as much assurance that the engine and train crew are aware of the restriction as he would have if the conductor and engineman both signed for a 31 order. When a train for which orders are held approaches a station, the operator calls the dispatcher, in accordance with an ironclad rule, and asks to clear (for example) No. 10 with orders 45 and 52. (The rule requires that the operator first write these order numbers on his clearance card and then repeat them from the clearance card to the dispatcher.) The dispatcher checks with the operator, and if he finds that orders 45 and 52 are all the orders held by that operator for that train, he gives O. K. to the clearance card and the operator so notes thereon. This gives the dispatcher an absolute check on the delivery of all orders, and he has just as much assurance that they will be properly executed as though they were on a 31 form.

Under our system of delivering the 19 order, there is little or no chance of the copies becoming soiled or mutilated, and as dispatchers are expected to exercise care and judgment in the placing of a 19 order which restricts the rights of a train, train and engine crews will have ample time to become familiar with the contents of all orders before arriving at the point where orders are to be executed. The rules require that in case an order is sent to a train restricting its rights at that particular station, the train must first be brought to a stop before the operator delivers the order. The dispatcher must guard against restricting the rights of trains at stations where the order is to be delivered, and should it become necessary to do so, he must take the precaution to remind the operator to bring the train to a stop and take such other precaution for safety as local conditions may demand.

The real intent of the 19 order is to expedite the movement of trains. If a railway manager feels that it is more important to keep his operators at the ticket windows than to get out upon the platform to deliver a 19 order, to avoid stopping a train, that is a matter for him to decide. The question we are trying to solve now, is, do we consider the 19 order a safe and practicable method of handling trains on railways not protected by block signals? The conditions under which operators are working and the density of traffic ought not be considered in arriving at the proper solution of this important question.

Answering the New Haven man further: If a question should arise between the operator and the conductor as to the delivery of one or more orders, the clearance card would be evidence as to who was in the right. If the conductor held all the orders shown on the clearance card, and an order was not delivered, it would be evidence against the operator. But if the clearance card showed all the numbers of the orders the operator claimed he delivered to the conductor and the conductor claimed one was missing, then the conductor would be to blame for not checking his orders against his clearance card, and if he found the clearance card called for a number of an order which was not delivered to him, his train should be brought to a stop, and not started again until the error was corrected.

Mr. Forman, in his article in the *Railway Age Gazette* of March 15, page 466, agrees that the 19 order is a safe method, so long as the middle order is used.

An officer of the Union Pacific in his article in the *Railway Age Gazette*, March 22, page 675, says that the 19 order has been extensively and successfully used, and is a wonderful help

in expediting the movement of trains, but should not be used on lines not protected by automatic block signals. He gives as the reason that to do so would require 100 per cent. efficiency. Can we not say the same about the 31 order? Will he say that they have had any trouble, even a hazard caused by the use of the 19 order system which could have been prevented by the use of a 31 order? If not, why can we not, with at least as much safety, use the 19 order exclusively, on roads not protected by automatic block signals?

Mr. Connors, general manager of the Hocking Valley, in his article, *Railway Age Gazette*, March 22, page 675, says they have used the 19 order, almost exclusively, during the past four years, on a busy single track road; that he knows of no instance where the 19 order was not entirely satisfactory, and that it is the unanimous opinion of his despatchers, including the chiefs, that the exclusive use of the 19 order is just as safe as the exclusive use of the 31 order would be. This is the busy railway east of Chicago, to which I referred in my article of March 8, a road not protected by automatic block signals.

Mr. Fay (April 5, page 788) says that to make the exclusive use of the 19 order effective, the train order signal, when displayed for a 19 order, should authorize the train to which it is given to proceed on the main line and take the order running. If there is a rule in the standard code which authorizes a procedure of this kind, I am sure I never heard of it. Such a rule would be dangerous.

With the exclusive use of a 19 order, it must be borne in mind that we restrict the rights of trains as well as give additional rights. This being so a train approaching a station, finding the signal indicating "orders," has no right to assume that the order is one conferring additional rights. As a matter of fact, the rules on any road where the 19 order system is in vogue, either with or without automatic block signals, require the train to enter the siding when its orders do not permit it to proceed beyond that point against an opposing train or ahead of a train of superior right or class. And if the despatcher wishes to confer additional rights, he must either direct the operator to take the order to such train at the switch, or permit the train to pull through the siding. And this is the only safe method of dealing with that particular situation.

Operators must not be permitted to "high ball" trains down the main line and the train and engine crews must not obey such a signal.

Of all the examples submitted by Mr. Fay, there is not one that could be the cause of a collision, or even a hazard, if the rules are obeyed.

Take, for example, his first illustration: A train running from W to A, B, C, etc. Despatcher expects the train to make B for an opposing superior train. He wishes to hand it a 19 order at A concerning some other train. The inferior train has lost time and is unable to make B for the opposing train and should take siding at A. The operator at A holds the 19 order and gives the belated train a signal to proceed along the main line and pick up his 19 order running. The engineman, he says, does so, and by the time he finds out that the order gives him nothing on the opposing superior train, it is then too late to avert a collision.

There is no rule in the standard code which authorizes that train to pass the first switch under such circumstances. The rules require that train to head in. The crew has no right to assume that the order confers additional rights; they must know it for an absolute fact, before proceeding along the main line. As to situations that may arise making it risky to deliver a 19 order running, Mr. Fay should describe such situations.

The only element of danger in the 19 order is restricting the rights of a train at the point where it gets the order. But the rules forbid despatchers to indulge this practice, except in case of emergency, in which case the operator must bring the train to a full stop. Mr. Fay's article conveys a wrong impression in assuming that the train order signal, when displayed for "orders," always indicates "proceed."

We are confronted with a proposition where custom and precedent are blocking the road of progress. Railway managers are clinging to the 31 order because of its supposed superiority in point of safety, but the government statistics are evidence that this is a mistaken idea.

J. O. Kelly, International & Great Northern, gives a leaf from his experience as follows:

In Mr. Fay's comment on 19 orders in your issue of April 5, he seems to contemplate that the rules authorize trains to assume that a 19 order permits them to "proceed on main line and take order running." But would not that be the fault of the rules rather than the fault of the 19 order? The 19 order has been used effectively for a long time on many roads where the rules expressly forbid trains assuming anything. If the train has no right on the main track to the train order signal, the rule should authorize it to do only one of two things—head into the siding or protect in accordance with rule 99. When despatchers find out that trains are not permitted to proceed on the main track against the right of a superior train on zigzag signals from the operator, they usually take care of the situation by figuring ahead; or in case of emergency tell the operator to take the order to the switch at which the train should pull in.

G. F. Turley, Norfolk & Western, gives an estimate of time lost, and tells of the practice of his road as follows:

I have read with much satisfaction the articles on the unrestricted use of the 19 train order. I am thoroughly convinced that this is a sound movement in the direction of twentieth century advancement, and I have for several years advocated the elimination of the 31 order as it is generally used. For a number of years our company has used the 31 order only to the train whose rights were restricted. Where the conductors signs 31 orders at the telegraph office and after reading to the operator, goes to the engine, delivering to engineman, and requiring him to read the order and then sign the conductor's copy, we have a slow and tedious process, and one that consumes a lot of time, especially where trains are doubleheaded, necessitating two transactions with the enginemen. It is conservative to say that an average period of ten minutes is required at each station to handle 31 orders. The conductor in many cases has to walk almost the entire length of his train to reach the telegraph office and then comply with the usual requirements. It is fair to assume that a ruling train which is late will be stopped as often as half a dozen times on a district where there is considerable traffic, particularly on single track; thus one hour is lost getting orders, and this probably means one hour overtime for the crew, unless the time lost is recovered on the run. If it is recovered, it is likely accomplished by excessive speed, bordering on the danger line.

I am well aware that there are many sticklers for the 31 order. The advocates of the 31 order would contend that if a train got by a station without an order, the despatcher would notice the omission and would probably be able to get one or both trains before collision. But despatchers are not so extremely vigilant. Is it not true that within the recollection of most railway men of long experience, there have been collisions which would have been prevented if the despatcher had kept a careful check on his orders and discovered immediately that a certain order had not been delivered to a train? The despatcher's excuse for not discovering the error, in nine cases out of ten, was that he was too busy and overlooked it.

An operator displays his signals for 19 as well as 31 orders; is it reasonable to suppose that a train will pass the signal without orders or a proper clearance? Certainly not. Our clearance card bears an additional line following the address reading:

"Herewith orders No....."

And the operator is required to fill in the numbers of the orders delivered with the card. This gives the conductor and engineman an opportunity to check the orders received. If an order mentioned on the card is not delivered the train can be instantly stopped.

Our clearance card reads, "Herewith orders No....."

and the operator must write in the number of each order delivered. A note at the bottom requires the conductor and engine-man each to check the number of orders against the statement in the clearance card. The train-rule committee of the American Railway Association refused to recommend the adoption of this form, but it has been in successful use on the Norfolk & Western for a number of years.

I feel certain that the unrestricted use of the 19 order will become universal because it appears to be the most rational method. The 31 order may have been all right under the old regime. To my mind the only thing that sustains it today is tradition and perhaps some sentiment. We are advancing in all other lines. Why not take another long step forward by relegating the 31 order to the archives along with our ancient rules and time tables?

Sundry Experiences of Despatchers.—After reading the correspondence concerning the exclusive use of 19 orders in the management of trains on single track lines, the general superintendent of one of the Harriman lines held a discussion on the subject with his despatchers and chief despatchers, and has given us the results of that discussion. These despatchers have used form 19 exclusively, in some of their territory, for one or two years, or longer, and some of them have used it extensively for a longer time. All of them agree substantially with the views of Mr. Finan. From the memoranda of these despatchers' views we extract those paragraphs which throw additional light on the subject.

Mr. A, an assistant superintendent, believes that there is less liability of failure in handling 19 orders than in handling 31 orders.

Mr. B, a chief dispatcher, discussing the question whether the use of form 19 will increase the hazard of accident, concludes that it will not. He has observed that in handling 19 orders the efficiency of the operators improves; they are compelled to be more alert, and with the increased responsibility they take a more lively interest in their work.

Mr. C, a dispatcher, referring to the rule of his road to require enginemen to see the train order signal move from the stop to the proceed position, and to stop and call for a clearance card if he does not see it move, says that the unrestricted use of the 19 order would reduce to a minimum the accidents due to the human factors; and this regardless of whether or not block signals, either automatic or non-automatic, are in use. In his experience of two years and six months with the unrestricted use of form 19, he has known of no instance where an order restricting the rights of a train has failed to be delivered or has been forgotten or overlooked by any trainman or engineman.

Mr. D, a dispatcher, says that during his 16 years' experience the greatest hazard that he has known was in connection with 31 orders, where the operator, in violation of the rule, would send to the dispatcher the signatures of conductors before these had actually been affixed to the orders, and then leave out one order when delivering two or more to the conductor. With the proper use of clearance cards, as a safeguard against this danger, form 19 is wholly satisfactory.

Mr. E, a chief dispatcher, agrees with the others, but would make an exception. In sending an order to a train at a blind siding, restricting the rights of that train, the order being sent in care of another person, he would use form 31. Also, in the case of an order at a meeting point where the view from an approaching train is obstructed, he would require the train to be stopped. He thinks, also, that the safety of form 19 might be questionable in the case where a train has been cleared from a station and is subsequently delayed there and the dispatcher wishes to have the operator call the conductor into the office to receive further orders; would it be safe to move another train against that train, without first securing the conductor's signature?

Mr. F, a dispatcher, referring to the liability of operators to transmit a conductor's signature, and even then fail to deliver

an order; and agreeing with Mr. C, illustrates the advantage of the rule not to require signatures by the following description of the ordinary routine:

An operator has five orders for a train; when the train shows up the operator prepares his clearance card, placing on it each individual order number which that train is to receive; these numbers are transmitted to the dispatcher from the clearance card for his O. K. If an order is omitted, the dispatcher detects the omission; or if the operator should misplace an order after receiving O. K. from the dispatcher and before making delivery to train or engineman, the omission would be detected from the train or engineman's check of orders against the clearance card. But it is imperative that the operators receive the O. K. from the dispatcher for the orders as they appear on the clearance card, and not on a reading of numbers from the original order; this for the reason that should an operator transmit O. K. for order numbers from the original orders and prepare his clearance afterwards, there is a chance that he might not enter all the orders on the card. But if the orders are entered on a clearance card and O. K. received from the dispatcher for orders as they appear on the card there is a material reduction of the chances for a "man failure"; each one connected with the transaction has a check against each other with whom he deals.

F. C. RICE AND THE AMERICAN RAILWAY ASSOCIATION ON ACCIDENTS.

At the May meeting of the American Railway Association, F. C. Rice, chairman of the transportation committee, made a brief talk on railway accidents, and introduced three resolutions regarding the subject which were adopted and referred to the executive committee for action. The first requested the executive committee to confer directly, or through whom it may delegate, with the national authorities concerning steps to educate the public regarding the danger of trespassing on railways and concerning what action, in the form of legislation or otherwise, there should be taken to stop this practice, which in the ten years ending June 30, 1911, cost the lives of 50,708 people. The second resolution expressed it as the sense of the American Railway Association that its members should bring the facts about railway trespassing and its results to the attention of the authorities of the states and municipalities through which they operate, with a view to securing proper laws or enforcement of existing laws to prevent trespassing and its consequent loss of life. The last resolution set forth that the association and its members appreciated the need for increased efforts by this organization, by the railways individually and by their employees to reduce accidents, but it deprecated hasty, ill-advised action to compel the railways to make enormous expenditures for changes in their plants. It set forth that the present earnings of many railways would be insufficient to bear the additional burden thereby imposed and that statistics on the subject demonstrate that no improvements in existing facilities would prevent a vast majority of the accidents that now occur, because these are not due to defects of the equipment or plant of the railways, but to failures of the human element in railway operation, and are, therefore, preventable only by improvements in the human element. In introducing these resolutions, Mr. Rice said:

This association after years of experience, and faithful, public-spirited labor, has developed and adopted a system of train rules, dispatching rules, manual and controlled manual and automatic block and interlocking rules, founded on the best judgment and the best practice of its members. There is no want of perfection in these systems to prevent collision accidents.

Collision accidents, which have been and are now occurring, are in about every instance the result of disregard and disobedience of this association's standard rules. None of this class of accidents would occur if these rules were obeyed. The railways have also adopted rules to govern other details of opera-

tion, which, if they were properly enforced and obeyed, would reduce accidents to the practical minimum.

Still, there is a belief in the minds of our congressmen and other public officials, which is finding expression in the press and in legislation, that the railways are almost criminally delinquent, or mercilessly penurious and disregardful of human life in not more lavishly expending money for imaginary safeguards. We all know the mistaken attitude to which the public is being led, and that the safety which we can and should furnish is not dependent on expensive installations of any description.

The statistics of the Interstate Commerce Commission show, contrary to the popular impression, that the accident situation on our railways is actually improving. During the four years ending with 1911 the number of passengers killed was less by 25 per cent. than the number killed in the four years ending with 1907, and likewise the number of employees killed during the four years ending with 1911 was 18 per cent. less than the number killed in the four years ending with 1907. This absolute reduction in fatalities to passengers and employees was accomplished in spite of an increase in the traffic handled. But, unfortunately, our accident record is still very unsatisfactory. During the year ending June 30, 1911, and the three months of July, August and September next following, a total period of 15 months, there were killed in connection with railways from all causes 12,715 persons.

Of this number 6,841, or nearly 54 per cent. were designated by the Interstate Commerce Commission as trespassers. The public thinks only of the entire 12,715 people killed, without giving any consideration to the fact that for the deaths of more than one-half—that is, of the 6,841 trespassers—the public itself is responsible.

From a recent reliable statement, the number of passengers, employees and all others killed on 204,486 miles of European railways for 1910 were 7,634, and for 1911 on 240,830 miles of United States railways 9,857. Of this latter number the Interstate Commerce Commission states that 5,284 were trespassers either upon the trains or by reason of unrestrained access to places or situations which are reserved to those professionally employed by the railways. If we subtract the 5,284 trespassers from 9,857 it leaves 4,573. The figures would then stand 7,634 killed in all Europe, and 4,573 killed in all the United States.

Referring further to the 4,573 persons killed in the United States who were not trespassers, I would like to say that the odds of risk are against the United States, because of our preponderance of freight tonnage, which is more than twice that of all Europe. This injects the freight trains and the auxiliary mileage of freight yards, which equals the combined mileage of the four principal countries of Europe, namely, 113,084 miles.

Our principal fatalities to employees are in freight yards, which are indispensable, and owing to our preponderance of freight tonnage and freight train mileage, we cannot obviate this excess of yard mileage, but perhaps we can restrain the reckless exposure of the lives of our train and yardmen, who, to excel in the physical things they do and in their desire to carry out the spirit of haste, subject themselves to danger by many acts of imprudence, contrary to the advice and rules of the companies.

Why should not the public be urged to feel and to assume some responsibility for this loss of more than one-half of the total number of lives in connection with operation of railways? In some states the laws regarding trespassing on railways are inadequate. Generally there are abundant laws, but they are not observed by the people or enforced by public authorities.

Besides the trespassers killed, there remains the large number of 5,874 persons whose lives were lost during these fifteen months, and for whose deaths the public cannot be held wholly responsible.

Of this number, 974 passengers and employees were killed in collision and derailment accidents. This leaves 4,700 deaths to be accounted for in other ways. One thousand were lost at highway crossings, in which cases there must have been in al-

most every instance individual responsibility, or, at least, very great contributory negligence. The cause of the remaining 3,700 deaths are mostly classified by the commission under the following heads:

Coupling cars, doing work about trains, insufficient clearance, falling from cars and engines, getting on and off cars and engines, being struck or run over by cars and engines, employees in shops and those classed as industrials. One hundred and fifteen were charged to insufficient clearance of structures. Statistics of accidents are being given wide currency in the public press. Regardless of their causes, responsibility for them is universally charged up in a lump against the railways. In spite, therefore, of all that this association and that the individual roads have done to reduce accidents and to educate public opinion regarding them, it seems imperative that we should deeply consider whether there is not much more regarding this matter that we ought to and can do.

The large amount of money which the railways are voluntarily expending for safeguarding the transportation of explosives and other dangerous articles is an illustration of what the railways are doing primarily for their own protection, but also largely for the protection of the people against themselves.

Notwithstanding this, the sentiment of the public, of the lawmakers and of regulating commissions is indicated both by legislation that has been enacted and by legislation which is proposed and is now pending. We have already the federal safety appliances law, the federal boiler inspection law, the hours-of-service law, the ashpan law, and the law under which the Interstate Commerce Commission investigates accidents. We all know how some of the inspections and investigations under the supervision of the commission are being made.

We have full crew laws in several states. We have pending in Congress bills to require the widening of clearances, the substitution of steel for all wooden passenger train cars, the universal installation of block signal systems, etc. There have even been introduced bills to require the use of automatic stops, although their desirability, if they were practical, and their practicability, if they were desirable, under ordinary conditions of steam operation, have both yet to be demonstrated. Our lamented Mr. Melcher sent out to us shortly before his death a bulletin in which he stated that the total estimated initial expense to American railways for compliance with pending federal bills would be \$1,360,000,000.

The Block Signal and Train Control Board, which, as an auxiliary to the Interstate Commerce Commission, has been engaged for the past four years in investigating devices designed to circumvent the disastrous results arising from neglect and oversight of enginemen and others, has given voice to statements of the following character in each of its four annual reports, which, in my opinion, are most to its credit: "It being admitted what is most needed is automatic performance of one's duties rather than automatic mechanical devices, how shall we get it?"

The board has repeatedly called attention to the superiority of the human element for safeguarding railway transportation over mechanical and automatic contrivances. The board has kept in the foreground the importance of the education and proficiency of the men.

No one who surveys the past history of railway regulation in this country can doubt that the railways are facing the pretty certain fact that, unless they shall take steps and give assurance that they will reduce the number of accidents and fatalities more notably in the future than they have in the past, the same public opinion that has compelled them to equip their cars and engines with safety devices, that has fixed the limits of hours of service, that fixes the rates that the public must pay for the transportation of themselves and their property, and that regulates the conduct of the roads in numerous other ways, will cause regulation to extend its control to all the details of operation, with many of the inconsistencies and incongruities which can be anticipated.

In view of these conditions, is it not almost imperative that this association, as an association of the American railways, shall call the attention of the national and state governments to the large proportion of the total loss of life in railway accidents which is the result of trespass or unlawful entry on the trains or property of the railways, and invite the national and state governments, and the governments of municipalities, to exercise their influence and authority in controlling this class of fatalities, for which the public is responsible? Should the Interstate Commerce Commission not be notified that we think it unfair to permit unrestrained trespass of the character which produces such large loss of life, and then to send the figures of accidents to the country in quarterly and annual reports as the results of railway operation? Should we not go still further and indicate to the public, to public authorities and to railway employees that, as railway officers, we fully and frankly recognize the responsibility and duty of railway managements in connection with the accident situation, and that if they will give us the co-operation on their part, which is essential to a solution of the accident problem, and will not interfere with operation with regulation which is well meant, but which often hinders, rather than helps, the increase of safety in transportation, we will do our part toward reducing the railway accident record?

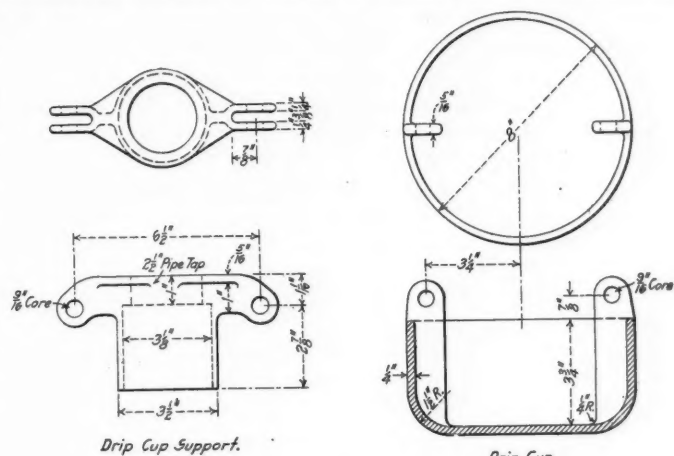
I believe that the initiative in regard to this matter should come from the railways themselves. I also believe that if the railways individually and this association shall enter with increased enthusiasm and energy on a campaign for the reduction of accidents, and shall tactfully seek the co-operation of others concerned, a great improvement in conditions will be brought about.

Recently a number of railways have organized safety committees, composed of both their officers and employees, to study and remedy the conditions that cause accidents, and the reports indicate that they have been getting excellent results. Is it not worthy of consideration whether this association, through some committee or commission designated by it, should not begin a nation-wide campaign against accidents, similar in its methods to those followed by the safety committees on various railways? As one who has been long in railway service, and has witnessed many changes in the relations between the railways on the one hand and the public and their employees on the other, I enter-

tain grave fears as to the results, unless some long and important step be taken very soon, both to reduce railway accidents and to educate public opinion regarding them and regarding the efforts that are being made to reduce them.

CENTRAL OF NEW JERSEY ICE CAR.

Ice must be carried in well insulated cars that are securely braced to withstand the impacts due to the shifting of the load. A load of ice is more liable to shift than almost any other commodity and the car must have a strong end construction. The floor must be made water proof to prevent water from leaking through and rusting or rotting the underframe. Two hundred



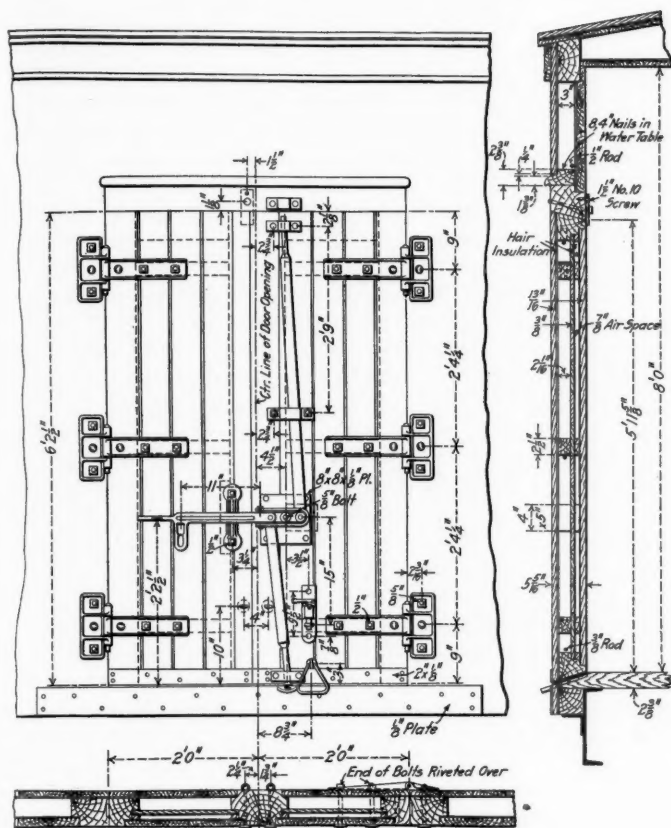
Drip Cup for Ice Car.

and fifty cars in which these requirements have been carefully considered have recently been delivered to the Central Railroad of New Jersey by the Standard Steel Car Company, Pittsburgh, Pa. They were designed jointly by the engineers of the railway company and the builders.

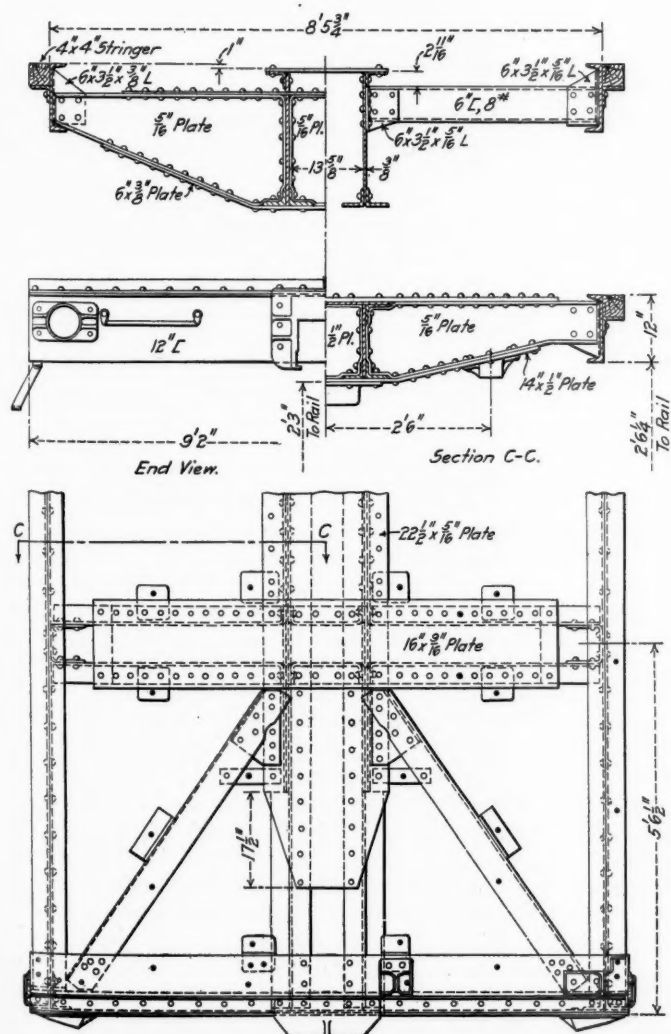
The car is 38 ft. 4 in. long over the striking plates and has a capacity of 80,000 lbs. The inside is 36 ft. long x 8½ ft. wide x 8 ft. high, providing a space for about 140,000 lbs. of ice, but it



Ice Car of 80,000 lbs. Capacity; Central Railroad of New Jersey.



Side Door for Ice Car.



Partial Plan and Sections of Steel Underframe for Ice Car.

the stringers and center sills to protect the underframe from any moisture that may permeate through the floor. Four air seal drip cups of a special design shown in one of the illustrations are used to drain the car.

The center sills are I-beams 24 in. deep at the center and tapering to 13 7/16 in. at the ends. Two needle beams extend across the car 4 ft. 5 in. each side of the center, while three 6-in. channels serve as cross-bearers. The end sills are 12-in. channels with their flanges turned inward. The side sills are also made of 12-in. channels with the flanges turned inward and with a 4 in. wooden sill on the outside supported on angle irons.

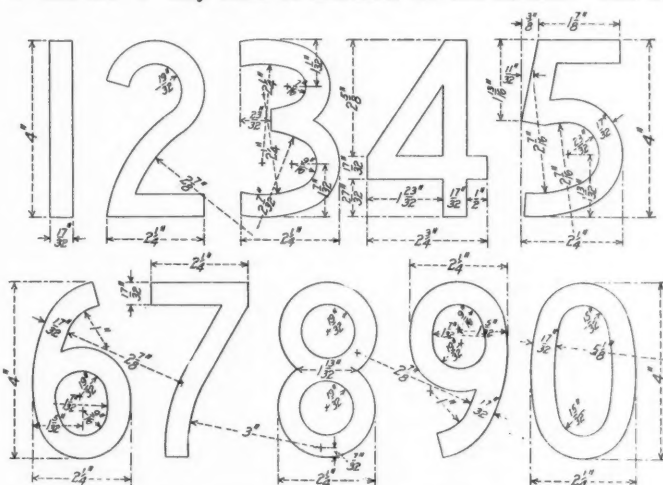
The striking plate is of special construction, being designed by G. W. Rink, mechanical engineer on the Central Railroad of New Jersey. Its special feature is the coupler carrier, which is so designed that when one surface is worn by the coupler yoke it can be inverted or renewed, providing a new surface for wear and prolonging the life of the plate.

Four different kinds of draft rigging have been applied as follows: The Farlow-Westinghouse on 50 cars; the Farlow-Gould on 50; the Farlow-Session on 50 and the Miner friction, class A-7, on 100 cars, the idea being to test out these different types of draft gear in this particular service. The trucks are of the cast steel side frame type made by the American Steel Foundries and the truck bolsters are also made of cast steel. The truck frames are provided with removable wearing plates at the opening for the bolster. The wheels are 33 in. in diameter and weigh 675 lbs. The underframe and the trucks are designed for 88,000 lbs. capacity each, in addition to the light weight of the car body. This provides a leeway of 8,000 lbs. on the rated capacity of the car.

NEW DESIGN FOR HEADLIGHT AND CAR NUMBERS.

The accompanying drawing shows the design of lettering which has been adopted for headlights on the western lines of the Canadian Pacific. They are also used on time cards, and it is expected that they will be put on engine cabs, and possibly later on box cars.

They were designed by George Bury, vice-president, with the idea of making them so distinct that it would be impossible to mistake them. In many designs of figures in common use the "3", the "6" and the "8" may often be mistaken for one another. This is



Headlight Numbers Used on the Canadian Pacific.

largely because the loops on the 3's and 6's are long, and it will be noted that this feature particularly has been eliminated in the accompanying figures. The difference between the "5" and the "6" has also been noticeably increased.

Figures on locomotives and cars have to be read hurriedly in all kinds of light, and the accidents sometimes due to misreading engine numbers and the trouble resulting from misreading car numbers make it worth while to try to improve the legibility of the figures.

THE TAP LINE CASE SUPPLEMENTAL REPORT.

In the original report, after stating the history of the several tap lines there mentioned and setting forth the salient features in connection with their ownership, physical condition, and the manner in which their operations for the proprietary company are conducted, the commission found that in none of the cases there disposed of did the tap line perform a service of transportation either in the movement of the products of the mill of the proprietary company or in the movement of its logs from the forest to its mill. The commission held that the service in each case, so far as the logs and lumber of the proprietary company are concerned, was a plant service. It was also said at the close of the report that in a supplemental opinion, to be announced in the near future, the commission would state the facts in relation to all the other tap lines in this territory.

In the supplemental report many of the lines described differ only in detail from the lines described in the original report and consequently are controlled by the same principles. Each case is decided separately by the commission, which, however, calls attention to a practice that finds frequent illustration in the cases. In a number of cases the tap line without charge hauls the logs of the lumber company that owns it. In other cases the lumber company itself hauls its logs over the tap-line rails to its mill. In some instances its right to do this is evidenced by a formal trackage contract; in other instances it is done under a verbal understanding. In some cases no charge is entered up by the tap line against the lumber company for this use of its tracks, and in a few cases the lumber company pays a small compensation. In several instances the trunk lines themselves have given trackage rights for a small toll to lumber companies. The commission has not understood that special privileges of this kind may lawfully be granted to a shipper. It is not uncommon for one railway to give the use of its rails to another railway under a trackage agreement, but the commission sees no way in which a shipper may enjoy such a privilege over the rails of a common carrier, particularly when the compensation for the privilege is not published and the privilege is not open equally to other shippers. Except in one or two cases where the tap line crosses the state boundary line such arrangements are possibly to be regarded as purely local and therefore beyond our control. But they are inherently unlawful, and afford strong evidence that a tap line whose rails are used in that manner by its proprietary lumber company is a mere plant facility. On the other hand, such an arrangement with a shipper, even though it be purely local and therefore beyond the commission's control, may nevertheless operate as a rebate and be punishable as such under this law when it appears that the concession is made in order to secure the interstate traffic of the shipper. All such arrangements are wrongful and the commission expects them to be discontinued. Doubtless, the commission says, the same or generally similar conditions exist in other extensive lumber-producing districts and may be duplicated elsewhere in connection with different classes of traffic. But it is obvious that matters of this nature can not be dealt with in a wholesale manner, but must be considered separately and in the light of the surrounding conditions and special facts. Of the many cases decided by the commission there are printed herewith two by way of examples and also the commission's general remarks.

LOUISIANA & PINE BLUFF.

The Louisiana & Pine Bluff is owned by the Union Sawmill Company, which itself is subsidiary to and owned by the Frost-Johnson Lumber Company. The three companies are one in interest. The facts are somewhat involved, but it will be well to state in some detail the history of the whole investment.

The Union Sawmill Company was incorporated in December, 1902, and acquired a large body of timber lying in southern

Arkansas and across the line in Louisiana. It opened a sawmill at Huttig, Ark., and as a facility for the lumbering operations the Little Rock & Monroe railway was incorporated, and 44 miles of track were constructed, extending from a connection with the El Dorado & Bastrop division of the St. Louis, Iron Mountain & Southern at Felsenthal to Monroe, passing through Huttig.

Immediately after the completion of this line, in the spring of 1905, it was sold to the Iron Mountain for about \$580,000 in cash, the right being reserved to the sawmill company, in a contract with the Iron Mountain, to operate its logging trains over the Little Rock & Monroe, the El Dorado & Bastrop, and Farmerville & Southern, being subsidiary lines of the Iron Mountain system, at a trackage charge of 35 cents per train-mile. At about this time, and apparently pursuant to a suggestion by the Iron Mountain officials, the sawmill company acquired extensive additional holdings of timber land valued at more than \$1,000,000. The contract heretofore referred to required the sawmill company and C. D. Johnson individually to organize a railway corporation for the construction of a new line northerly from Huttig, to reach the timber in that direction and make it available for manufacture at the mill at Huttig. The provision in the contract was that the proposed railway should be constructed and incorporated in such manner as to justify the publication of joint rates and the payment to it of allowances. In accordance with this agreement the Louisiana & Pine Bluff was incorporated in March, 1905, with a capital stock of \$300,000, which was issued to practically the same persons that owned the Union Sawmill Company. The so-called terminals in the vicinity of the mill at Huttig, as well as the locomotives, cars, and other equipment that had been used on the Little Rock & Monroe previous to its sale to the Iron Mountain, were turned over to the tap line by the sawmill company in exchange for stock, which stock is still held by the sawmill company. This, in brief, is the story of the investment.

The Louisiana & Pine Bluff, as described on the record, has a main track 3 miles long connecting with the Farmerville & Southern and Little Rock & Monroe divisions of the Iron Mountain at Huttig, and extending to Dollar Junction, where it meets the El Dorado & Bastrop division of the same system. There is also about 5 miles of track beyond Dollar Junction which was not yet completed for operation at the date of the hearing. From Huttig a track nearly 22 miles long runs westward in a general way parallel to the Iron Mountain. This track was not included as part of the incorporated road until shortly prior to the hearing. We shall refer again to the logging tracks, aggregating 75 miles in length, some of which are included as part of the incorporated line, while others are not. A track or branch about 3 miles in length, extending from Felsenthal to the river, was reserved when the Little Rock & Monroe was sold to the Iron Mountain, and was afterwards conveyed by the lumber company to the Louisiana & Pine Bluff. It was used for hauling logs from the river, and when the lumber company ceased getting logs from that source the track was abandoned and taken up. The equipment of the tap line consists of 12 locomotives, 1 combination passenger car, 1 caboose, 31 box cars, 36 flat cars, 22 coal and other cars, and 152 logging cars.

The track 22 miles in length from Huttig to El Dorado & Bastrop Junction, which has been referred to above, was constructed by the tap line, but until a year and a half before the hearing it was operated by the Huttig Logging Company, owned by the Frost-Johnson interests. The annual report for 1911 does not include this track as part of the tap line, but it is distinctly so included on the record. Nothing was paid by the logging company or the Union Sawmill Company to the tap line for the use of the tracks. Connecting with the tap line at various points are logging branches, one of which is 7 miles in length and another 21 miles long. These are referred to on the record as main logging stems; and connecting with them are logging spurs which are built by the logging company, the necessary

steel being loaned by the tap line without charge. These spurs are operated by the logging company, which uses locomotives and cars belonging to the tap line, no rental being paid, although the locomotives are kept in repair by the tap line at its own cost.

The logging company loads the cars in the timber and moves them, with the engines borrowed from the tap line, to the main track. The cars are taken the rest of the way to the mill by the tap line, no charge being made against the lumber company or the logging company for the movement, although the trainmen employed by the tap line do the unloading.

The mill of the lumber company, as heretofore stated, is at Huttig and is directly accessible to the Iron Mountain. The plant covers about 160 acres. The lumber could be taken by the Iron Mountain directly from the mill; but as a matter of fact it is moved by the tap line for a distance of 3 miles to Dollar Junction, and there delivered to the Iron Mountain, which allows 5 cents per 100 lbs. out of its rates on yellow-pine lumber to all destinations. The rates on hardwood lumber are about 2 cents lower than the rates on yellow pine, and on such traffic the Iron Mountain allows 3 cents per 100 lbs. On all lumber the rate of the Iron Mountain from the junction point is published as a joint rate from points on the tap line.

The Wisconsin Lumber Company, which is affiliated with the International Harvester Company, has a large hardwood sawmill on the tracks of the tap line at Huttig. It obtains a portion of its hardwood logs from the Union Sawmill Company, at a price including their delivery at the mill. Such logs are hauled to the mill in the same manner as the yellow-pine logs moving to the Union Sawmill. The hardwood logs which the Wisconsin Lumber Company obtains from the lands owned by others are also brought to the mill without charge, the service being performed by the logging company and the tap line in the manner already described. The manufactured lumber is moved from the Wisconsin Lumber Company's mill to Dollar Junction by the tap line, which receives the divisions heretofore stated. The annual report to the commission for the fiscal year ending June 30, 1910, shows no tonnage other than forest products moving outbound and coal coming inbound. The coal was consumed entirely by the sawmill company, the logging company, and the tap line itself, and aggregated 3,835 tons. Out of the total of 317,473 tons of logs and lumber handled during the same year, about 7,900 tons was manufactured by others than the sawmill company from logs cut on the lands of that company. The tap line has joint rates with the Iron Mountain on coal as well as lumber, but not on merchandise or class traffic. The record indicates that no charge is made for hauling logs that are cut by farmers or others and manufactured at the mills on the tap line. Although the tap line claims to run "two passenger trains daily" between Dollar Junction and Huttig, it has but one combination coach, and its receipts from passengers for the year 1910 amounted to only \$587.24. Its mail revenue amounted to \$101.31. Its operating revenues for that year aggregated \$78,714.93, and this amount was substantially less than its operating expenses. On June 30, 1910, it had an accumulated deficit of more than \$85,000, which we assume has been taken care of in some way by the lumber company or its owners.

This is a typical instance of a mere manipulation of its facilities in such a way as to give the tap line the appearance of performing a service as a basis for an allowance out of the rate. Indeed, it was agreed, as heretofore stated, that the tap line should be constructed in such a manner as to justify allowances. The Iron Mountain reaches the mill with its own rails, and is, therefore, in a position to serve the mill directly without making a concession to the lumber company out of the rate. The lumber company, however, has constructed a track of its own 3 miles in length to the Iron Mountain rails, and in compensation for its service in switching its lumber over that track it receives allowances of 5 cents a hundred pounds, or from \$20 to \$30 a car. We have already said that the extension of the trunk-line lumber rate through the mill point to the tree stump on a tap

line is discriminatory unless the same rate adjustment is in effect on the trunk line's own rails. The only service of transportation, therefore, that this tap line can be said to perform for the lumber company that owns it is the switching of the product of its mill to the trunk line, and this the latter is equipped to do upon its own rails. Under these circumstances we regard the arrangement as a mere device for the payment of allowances, which we hold to be unlawful.

We have already pointed out that a tap line claiming to be a common carrier can not render service for others without charge. It follows, if that is its status, that its practice of hauling hardwood logs without charge to the mill of the Wisconsin Lumber Company is unlawful. The divisions received by it for switching products of the Wisconsin Lumber Company's mill to the Iron Mountain are also unlawful.

TIMPSON & HENDERSON RAILWAY.

The mill of the Ragley Lumber Company was built in 1900 at Ragley, Tex., and about 10 miles of track laid to a connection with the Houston East & West Texas and the Texas & Gulf at Timpson. The following year there was incorporated the Timpson & Northwestern Railway. The lumber company retained the ownership of, or constructed, about 12 miles of additional track extending northwest from Ragley into the timber. In August, 1909, a new corporation was formed, known as the Timpson & Henderson Railway, about 60 per cent. of the stock of which was issued to and is held by the stockholders of the Ragley Lumber Company; about 40 per cent. was taken by citizens of Henderson. The new corporation not only took over the track of its predecessor, but also the 12 miles of logging road from Ragley to Pine Hill. The track was extended about 12 miles into Henderson, so that the tap line as in operation at the time of the hearing was 34 miles in length, beginning at Timpson and terminating at Henderson, where a connection is made with the International & Great Northern. In addition to the mill of the Ragley Lumber Company there are two small mills near Pine Hill, and a planing mill at a point known as Long Branch. There are also four small towns or settlements, each having one or more stores, and two of them having banks. Timpson and Henderson, the terminal points, each has a population of 3,000 or 4,000.

In addition to the capital stock, amounting to \$250,000, mention should be made of an indebtedness by the tap line to its president, who is also president of the Ragley Lumber Company, of nearly \$50,000. The two companies have the same officers.

In addition to the tracks already referred to the lumber company at the time of the hearing had unincorporated logging tracks connecting with the tap line near Pine Hill and extending into the timber. It hauled the logs with its own engines over this track to the incorporated line, and thence under a trackage right for which it paid 25 cents per train-mile, to the mill. The tap line moved the lumber from the mill to the trunk lines, a distance of 10 miles in the case of shipments routed through Timpson, or a distance of 25 miles on traffic moving through Henderson and over the International & Great Northern. It receives a division of from 3 to 4 cents per 100 lbs. from the Houston East & West Texas, and from 2 to 3 cents per 100 lbs. from the International & Great Northern. The Texas & Gulf is a part of the Atchison, Topeka & Santa Fe, and has made no allowances to this tap line since 1908; it formerly paid 1½ cents per 100 lbs. The statement made at the hearing was that the timber holdings of the lumber company would be entirely cut out within another year. We are now advised that the lumbering operations of this company will be brought to a conclusion within 60 days. We are also advised that one or two other new independent mills have recently been erected in proximity to this tap line, in which neither the Ragley Lumber Company nor any of its stockholders has any interest.

There are also joint class rates with the trunk lines and some commodity rates, out of which the tap line receives, for example, a division of 23 cents per 100 lbs. on cotton destined to Houston

and Galveston when moving through Timpson, and 20 cents through Henderson. In the calendar year 1910 it handled 1,029 carloads of lumber, of which 506 carloads belonged to the controlling lumber company. It also handled 15,274 tons of miscellaneous freight, consisting chiefly of grain and grain products, fertilizer and cotton. It does not file tariffs with the commission, but is a party to and concurs in tariffs issued by the trunk lines naming joint rates to and from points on its track. It runs one "mixed" train daily in each direction on a regular schedule and its receipts for passenger traffic for the calendar year 1910 are said to approximate \$11,000.

The Timpson & Henderson makes annual reports and claims to keep its accounts in accordance with the rulings of the commission.

In this case we hold that the connecting carriers may properly allow a division out of the rate on the products of the mill not exceeding, however, 2 cents per 100 lbs.

IRREGULAR PRACTICES OF TAP LINES.

It appears from the lines described in the supplemental report, as well as from the statement of those described in the original report, that there are many respects in which the law and the rules and regulations of the commission are not observed by the tap lines. Although claiming to be common carriers, some of them did not file annual reports with the commission until recently. The reports of others are so far from being complete that they can not be said to comply with the requirements of the act. Many of them also do not publish any local rates to apply on traffic received from or delivered to their trunk-line connections. Many of them carry passengers and less-than-carload shipments without charge at all; others make a charge without the authority of published tariffs. We have already referred to the use made by controlling lumber companies of their tap lines under formal and informal agreements for trackage rights with and without charge, and all without any tariff authority. The hours-of-service law, the safety appliance act, and other acts imposing certain requirements on common carriers engaged in interstate commerce are not fully complied with in many cases and in others are wholly disregarded. There is a lack of attention also to our rules and regulations respecting the filing of tariffs and the keeping of accounts. In some cases our examiners have been refused full access to the books of tap lines. With respect to all these matters the law makes no exception in favor of any railways that purport to be common carriers. While our conclusions in no instance have been based on the failure of a tap line to comply with our rules and regulations, we must give warning to all such companies that purport to hold themselves out as common carriers that such irregularities must promptly be corrected.

GENERAL COMMENTS.

The rates of the trunk lines for the movement of logs in this territory are penalty rates; that is to say, the inbound rate to the mill is higher than it should be and is reduced to a net rate, provided the lumber goes out over the rails of the same carrier. Such rate adjustments are adverted to and criticized in *Red River Cotton Oil Co. v. T. & P. Ry. Co.*, 23 I. C. C., 437. So far as we can see from a careful examination of the record there is no real necessity for any such rate adjustment in this territory. The penalty rates should be withdrawn, and in their place the carriers ought to fix reasonable flat rates for the inbound log movement.

Orders will be entered as soon as possible to give effect to the views expressed in the original and supplemental reports herein. Tariffs fixing rates and switching charges in accordance with our conclusions may be filed on three days' notice. The carriers will also be expected to submit for the approval of the commission the basis of allowances to lumber companies, under section 15, in the cases where in the original and supplemental reports we have said that such allowances might properly be paid. When approved by the commission such allowances must be published.

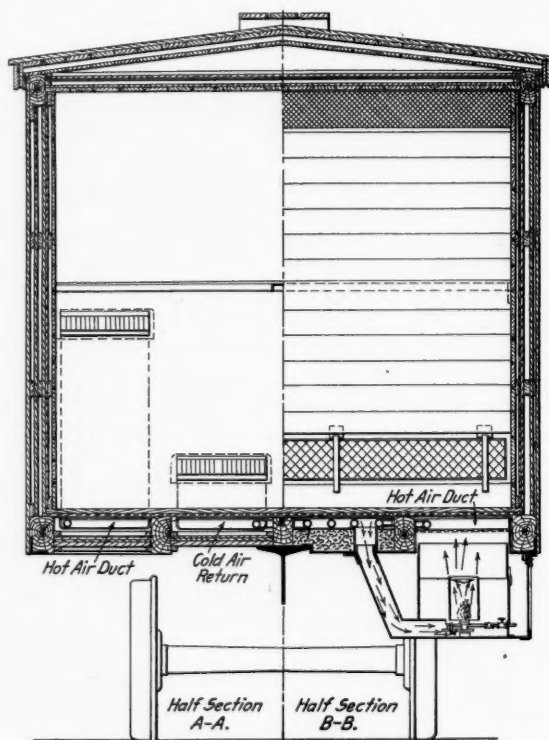
In the majority of cases the tap lines have made no joint class and commodity rates with their trunk-line connections. In other cases joint rates have been established, at least to some destinations. Where joint through class and commodity rates are in effect or are hereafter made effective to or from points on tap lines the trunk lines and the tap lines will be expected to submit to the commission for approval the basis of their divisions. It is expected also that they will submit for our approval reasonable and non-discriminatory rates on forest product when shipped from tap-line points other than the mills of the controlling companies, and will also submit the bases of the divisions thereof.

When all these matters shall have been adjusted in compliance with the views of the commission an order will be entered authorizing trunk lines to make settlements on these bases with respect to all traffic moving after May 1, either under section 15 or as allowances out of the rate, as provided herein in the respective cases.

ALCOHOL HEATER CAR.

The continued increase in the number of cars of perishable freight handled by the railways of the United States and Canada has made it more difficult each winter to provide the necessary protection from freezing and to bring perishable products to their destination without a large percentage of loss. The value of heater cars to a region producing perishable products and dependent on a distant market is of vital importance, and increasing demands are being made for heater car service. The alcohol heater car was designed to take care of these conditions and this demand.

The system comprises two heater boxes, or chambers, which



Cross-section Through Car Equipped with Alcohol Heater.

are placed at each side of the car under the floor. These boxes each contain two alcohol supply tanks and two burners. Between the heater boxes, and immediately beneath the floor of the car, run four horizontal ducts or flues, two for heated air and two for the return air. These ducts are connected to vertical flues placed in the end walls of the car, and from the two outside ducts heated air is admitted to the ice compartment at a point 3 ft. 6 in. above the floor. The ice compartment acts as a chimney and induces a rapid movement of the heated air through

the upper grated opening in the bulkhead into the loading space. The air diffuses between the lading and returns through the lower grated opening in the bulkhead and thence through the two return air ducts to the heater box. This arrangement causes a vigorous circulation of heated air within the car.

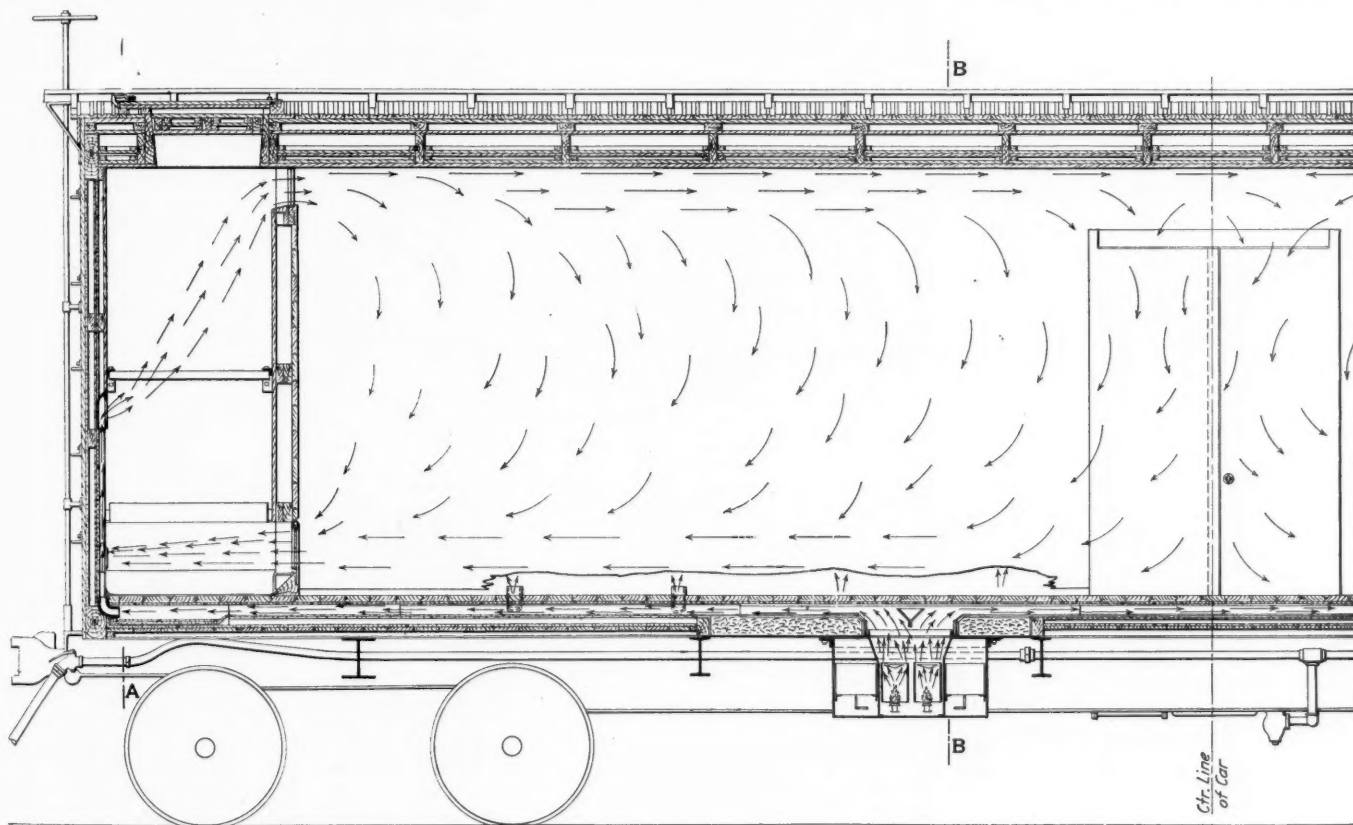
The ducts are provided with shutters or registers, which can be closed tight when the car uses ice in warm weather. The ducts are of galvanized iron and approximately $2\frac{1}{2}$ in. in depth and 20 in. in width, and are properly protected by mill board and asbestos cloth. Being placed under the floor, they are not only economically constructed, but assist materially in insulation, as they are filled with warm air which radiates through the floor, the total floor radiating surface being 265 sq. ft.

Various fuels have been tried in many different kinds of burners in the attempt to find something that would heat fruit and vegetable cars in winter. Experiments were made with oils and gases, but have not proved entirely satisfactory. Other types of stoves not only require constant attention, but give off

heating agent, and no smoke, soot or noxious gases are produced, nor is there any residuum, such as ashes and clinkers, to be removed.

The burners used in the alcohol heater are equipped with patent automatic valves which are self-contained within the burner and do not require adjustment. When heat is applied this valve opens and allows a free flow of vaporized alcohol into the burner which produces a clean smokeless flame about 5 in. high. In case the flame is extinguished the control valve closes and the supply of fuel is automatically shut off. Thus the use of manually operated valves is abolished and it is not necessary to have an attendant travel with the cars.

The method of operation of the alcohol heater car is very simple. It is only necessary to pour a small amount of alcohol into the pan beneath the burner and apply a match. The automatic valve within the burner does the rest. When the burner is sufficiently hot the valve opens and the supply of vaporized alcohol begins to flow. This mixes with the proper amount of



Alcohol Heater as Applied to a Refrigerator Car.

noxious odors, gases and soot, which vitiate the air within the car to such an extent in some cases as to damage the lading more than the low temperature.

In casting about for a suitable fuel it was finally decided that for several reasons denatured alcohol was the very best for this purpose. First, as used in the patent automatic burners it is reasonable in cost, requiring only one-half a pint per burner per hour at a cost of approximately $2\frac{1}{4}$ cents. Second, it is a safe fuel to use. The vapors will not explode when confined and ignited, as will gasoline, nor will the liquid soak into the floor of the car to make it more combustible; in fact, the denatured alcohol as used in the alcohol heater cars has been favorably passed on by the Bureau for the Safe Transportation of Explosives and other Dangerous Articles, and the railways have agreed to accept these cars for transportation over their lines without attendants. Third, alcohol requires less air per pound of fuel burned than any other fuel tried for this purpose, and no provision is required to admit free air to the combustion chamber. The products of combustion are used directly as the

air to support combustion and continues to burn until extinguished. Each car has a reservoir capacity of 24 gal., or enough to keep one burner in each heater box going continuously for eight 24-hour days without attention. These reservoirs can be filled at regularly established stations where a large supply of alcohol may be kept on hand. This parallels the case of the same car, which, when used as a refrigerator in summer, has to be re-iced. It is not necessary to open up the car from the time it is loaded until it reaches its destination. There are several hundred of these cars in service, and it has been found in actual practice that two burners, one in each heater box, will afford sufficient heat to keep the car at the proper temperature even in the severest weather.

These car heaters are supplied by The Alcohol Heating and Lighting Company, Chicago.

From 1900 to 1910, the average yearly pay of all classes of men employed on the Prussian state railways increased from \$338 to \$427, or 26½ per cent.

THE CHICAGO CAR DOOR.

The question of defective car doors and consequent damage to lading is attracting considerable attention, and in recent issues we have described some of the improved devices which are intended to overcome the objections to the ordinary doors now in service. The car door here illustrated is one of recent design, and the principal feature is the combined track and hood, the lower flange of which interlocks with the hangers, making it impossible to lose the door except when the car is wrecked. The hood also forms an excellent weather protection to the top of the door, as it projects down 2 in. below the top edge of the door, on the outside. Being housed inside the track the rollers are thoroughly protected from ice and snow, and as they project above the top of the hangers they prevent the door from cramping, one of the rollers running on the inside top of the track if the door is tilted. This is a feature appreciated by anyone that has ever tried to close a door by pushing on the lower corner of it.

The back edge of the door is protected from the entrance of sparks or water by a plate attached to the edge of the door, the inner edge of the plate being bent at an angle towards the door opening and interlocking with a plate attached to the face of the back door post. Another feature of this design is the

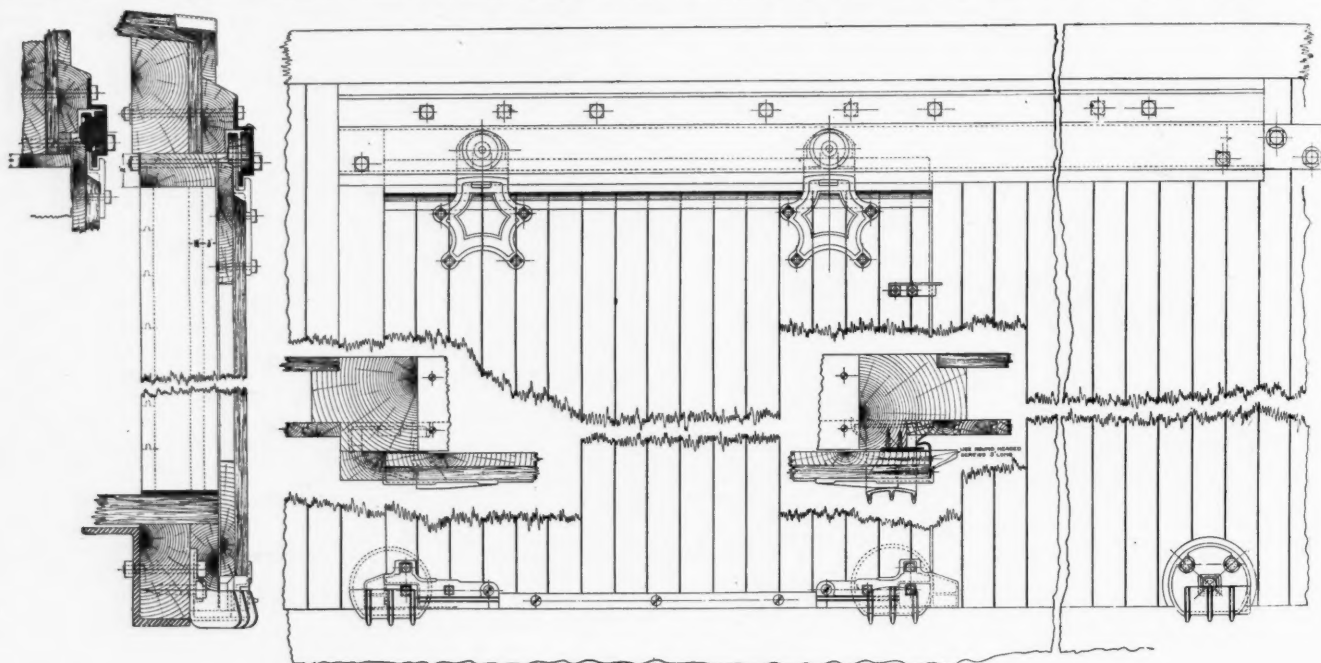
this door are heavy and substantial and have been designed for hard usage. They are supplied by the Chicago Car Door Company, Chicago.

WAGES OF BRITISH RAILWAY EMPLOYEES.

The Board of Trade (London) has published the following statistics of wages of railway employees, not including "other workers." The figures show average wages (including bonus) of "6-day workers" in the principal grades of adult workmen:

Occupation.	Number paid wages.	Average rate of wages.	Average actual earnings.
Engine drivers	26,430	\$9.80	\$11.17
Goods guards and brakemen...	15,643	6.86	7.34
Passenger guards	6,586	6.75	7.12
Signal men	26,849	6.17	6.69
Firemen	26,029	5.80	6.67
Shunters	14,097	5.78	6.23
Porters (goods)	18,506	5.05	5.31
Laborers (permanent way)...	27,197	4.87	5.27
Plate layers and packers.....	44,355	4.73	5.13
Porters (coaching and traffic)...	18,146	4.54	4.80

The hours of duty in a full week, exclusive of meal time and overtime, for adult "6-day workers" averages 58; for engine



Application of the Chicago Box Car Door.

burglar proof bracket at the bottom back corner of the door. This bracket is attached to the sill of the car by two bolts and one lag screw, the head of the lag screw fitting between two ribs on the face of the bracket. The bottom flange of the bracket is provided with a slot extending almost its entire length; when applying the bracket to the car it is raised up the length of the slot, the lag screw is screwed into place and the bracket is driven down to its proper position, when the bolts are run through the sill and tightened up. The bracket must be applied before the door is hung as, when the door is in place, it is impossible to remove the bracket, even if both bolts are taken out, without raising it up about 3 in. to release the head of the lag screw from between the ribs on the face of the bracket.

The lower corners of the door are provided with malleable iron corner irons, securely attached to the door, forming wedges to crowd the door against the face of the door posts. They are also provided with projecting wedges which fit into corresponding recesses in the abutment brackets and securely hold the door in position, whether open or closed. All the fixtures of

drivers and firemen, 62 hours; guards, 61 hours; porters, 60 to 61 hours; signalmen, 57½ hours; shunters, plate layers and laborers, 55 hours. A considerable proportion of employees receive allowances of uniform or other clothing, house rent free, etc., in addition to their cash wages.—*Consular Reports.*

The Smyrna-Cassaba railway, Asia Minor, is extending the Smyrna branch northward to the port of Panderma on the Sea of Marmora, 112 miles. Work was commenced last year and its completion is announced for 1912. The trip from Smyrna to Constantinople, Turkey, by this line will be made in 12 hours, of which eight will be by rail to Panderma and four by steamer to Constantinople. This will effect a saving of 12 hours on the present sea trip and 36 hours on the present overland route, via Afion Karahissar on the same line. The saving of time which will therefore be effected through this new route, will be of the greatest benefit to Smyrna, as nearly all the passenger and mail traffic comes through Constantinople.

General News Section.

The brotherhood of railway clerks met in convention at Boston this week with an attendance said to be 200.

Suits were filed in the United States district court at Cleveland last week against the Lake Shore & Michigan Southern, asking penalties of \$4,500 for nine alleged violations of the hours-of-service law.

President W. A. Gardner and other officers of the Chicago & North Western during a recent inspection trip with an oil-burning locomotive made an investigation of the Salt Creek oil fields in Wyoming.

The Texas Midland has announced its intention of establishing a gasoline-electric motor car service this fall between Paris and Dallas, Tex., each car making one round trip daily, a total distance of 232 miles.

A hearing in the Illinois Central car repair graft case was called in the criminal court at Chicago on June 3, but was again postponed, this time at the request of the state's attorney on account of the absence of an important witness.

Members of the Traffic Club of Chicago will make an inspection trip over the Chicago railway terminals on Tuesday, June 11, in a special train furnished by the Chicago & Western Indiana through the courtesy of Traffic Manager F. A. Spink.

Suits have been filed in the Circuit Court at Van Buren, Ark., against the St. Louis, Iron Mountain & Southern and St. Louis & San Francisco, to recover penalties of \$37,500 and \$16,500, respectively, for alleged violation of state safety appliances laws.

A special train carrying a delegation of Shriners made a fast run on the Union Pacific from Denver to Omaha on May 23, covering the distance in 12 hours and 30 minutes. The fastest regular schedule between the two cities is 14 hours and 25 minutes.

The Grand Trunk has granted increases of pay to its firemen. The old rates of \$2 to \$2.70 per 100 miles will be supplanted by a schedule of from \$2.15 to \$2.90. Within these limits the increase is from 10 to 30 cents per hundred miles. The monthly rates of \$57 to \$74 are increased to \$70 and \$80.

The special committee on railway terminals of the Chicago city council, of which Alderman Geiger is chairman, has been holding a series of conferences with the railway presidents to discuss the various plans which have been suggested for building railway passenger terminals south of Twelfth street.

Elroy Judson Bucknam, of Tomiko, Ontario, ten years old, has received from the Temiskaming & Northern Ontario Railway Commission a gift of a gold watch, in recognition of his presence of mind in flagging a passenger train with his red cap, when he discovered a broken rail on the 26th of March, last.

The Pennsylvania this week has taken a large number of its station agents by special trains to the Pennsylvania State College to acquaint them with the source of the agricultural education which the railway company has been disseminating among the farmers, partly through the instrumentality of the station agents.

The new Union Station at Norfolk, Va., accommodating the trains of the Norfolk & Western, the Norfolk Southern, and the Virginian was opened for business June 1. This station, costing about \$1,000,000, has been built by the Norfolk Terminal Railway, the Norfolk & Western holding the principal interest.

The Pennsylvania, the Lehigh Valley, the Central of New Jersey, the Erie, the Lackawanna, and the Baltimore & Ohio have filed suits in the federal court at New York against the New York, New Haven & Hartford for balances for car service in 1907 and 1908 when the rate of 50 cents a day was in effect. The sums claimed aggregate \$490,256.

The scheme for rail inspection outlined in the *Railway Age Gazette* of May 10, page 1057, has now been extended to every rail mill in the United States. The following railways in addition

to those already mentioned, are having their rails thus inspected: The Chicago & Western Indiana; the Maine Central; the Wabash; the Delaware & Hudson, and the Minneapolis, St. Paul & Sault Ste. Marie.

The Boston Elevated Railway is building for its street surface lines a "jointed coach"; that is to say, a street car made in two parts, or two cars fastened permanently together, with a covering or hood at the middle, the entrance for passengers being at the middle. The car will have the capacity of an ordinary car about 50 ft. long, while at the same time it can be run around curves at street corners, where a straight 50 ft. car could not conveniently be run.

In the *Railway Age Gazette* of May 24, page 1168, was published a news item stating that the Southern Pacific is to follow the plan which has been in effect on other Harriman lines of having accidents investigated by a board including two disinterested persons not connected with the railway, as well as the division officers, giving the findings of the board to the newspapers. As a matter of fact, the Southern Pacific adopted the board of inquiry and publicity method of dealing with accidents several years ago, and its policy has in no wise been changed.

F. H. Newell, director of the United States Reclamation Bureau, held a two-day conference at Chicago on May 31 and June 1, with land and immigration representatives of the western railways for the purpose of discussing ways and means for encouraging settlement on western lands. The more special object of the conference was to discuss plans for bringing about a concerted movement on the part of the government, the railways and the land owners to provide prospective western settlers with reliable and impartial information regarding western lands and conditions, to prevent misrepresentation and to do what is possible toward securing the right kind of settlers.

By a traffic agreement which has long been under consideration between the Illinois Central and the Chicago, Lake Shore & South Bend Electric Railway, through cars are now running between Gary, Ind., and the down-town terminal of the Illinois Central in Chicago. This service was established on Sunday, June 2, the electric cars being hauled by Illinois Central steam locomotives between Pullman and Randolph street. Six trains a day are being operated, making four stops on the Illinois Central and giving through service between Chicago and Hegewisch; Hammond, East Chicago and Gary, where connection is made for South Bend and other points reached by the Indiana interurban lines. For two years, since the electric railway was built, passengers have had to change cars at the Pullman terminal of the electric line.

The Elgin, Joliet & Eastern Railway has had safety committees actively at work since January, 1911, and in these 16 months the local committees have sent to headquarters over 1,200 suggestions for the promotion of safety; and all but about 75 of these have proved useful. This information appears in the last accident bulletin of the Indianapolis State Railroad Commission, which has recommended that all of the roads of the state establish safety committees, and which is making inquiries to see what the roads are doing. The Elgin, Joliet & Eastern uses stereopticon pictures and other up-to-date means of informing employees concerning every-day dangers. Bulletins are issued giving notice of important discoveries and conclusions. Cases have been found where men injured but slightly had made no report to the medical officer, with unfortunate results—in one case loss of life.

The House committee on interstate and foreign commerce has voted to make a favorable report on a bill providing that switchmen and signalmen must not be required to work more than eight hours a day. The Senate has passed a bill, which already had been passed by the House, stipulating that eight hours a day shall be the working limit for all persons engaged on contracts for the United States government. The House has passed without debate a bill to prohibit the entry at American ports of foreign vessels belonging to any person or combination violating the Sherman anti-trust law. This

bill has a clause authorizing the postmaster general to cancel any contract with the owners of any such vessel for carrying mails. The Senate has refused to concur in the action of the House in withholding appropriations for the Commerce court, but the appropriation bill as it passed the Senate, retains a clause limiting the traveling expenses of the judges of the Commerce court.

The Congressional committee investigating the conduct of Judge Archbald of the Commerce Court has concluded its public hearings. The testimony presented has not been of such a character as to warrant definite conclusions. On Monday of this week the clerk of the district court at Scranton, Pa., testified concerning a gift of money made to Judge Archbald by lawyers when the judge went to Europe. District Attorney Wise, of New York, was called to testify concerning the action of Judge Archbald in imposing minimum fines of \$1,000 each on 83 defendants in the cases against the wire pool, some months ago. Mr. Wise had protested against such mild punishment and he gave the committee his reasons for complaining of the action of the judge. E. E. Loomis, vice-president of the Delaware, Lackawanna & Western, when testifying before the committee, demanded that his name be cleared of the charges made in the vicious lies which he said had been told in the testimony at the hearing concerning him and his relation to negotiations for the sale of coal at Scranton.

Problem of Railway Nationalization in England.

Replying to a trade union deputation which urged the nationalization of the railways, the British prime minister, Mr. Asquith, recently said to his hearers: "Quite frankly, I do not think the burden of proof—which is placed on those who are in favor of nationalization of railways—has been satisfied. The profits earned by the companies are not extravagant return for commercial ventures." "The real point," said Mr. Asquith, "that we have got to consider as practical men is what changes, if any, are necessary to bring our railway services in better conformity with the general needs of the community. The paid-up capital for 1911 was £1,324,000,000. The gross receipts were 127¼ millions, and the expenditure 78½ millions, and the net receipts were, therefore, little more than 48½ millions. That brings out a net return upon the capital of 3.66 per cent. If you take the years from 1902 until 1907 you will find that the average percentage was about 3.44. The percentage return of 3.66 is the highest figure obtained certainly during the last ten years, and it is not a very high return for a commercial undertaking. Even when you have deducted all the 'watering' the return does not work out at more than 4.3 per cent. That is substantial, but not an extravagant return for a commercial venture which is attended with a great deal of risk. In a great many cases the ordinary shareholders have been kept for a long time without any return at all. The real practical question, apart from all the obvious difficulties, attending a gigantic undertaking of this kind, is whether we should be better off after the operation was concluded."

New Y. M. C. A. Building for New York City.

"The Railroad Branch" of the Young Men's Christian Association at 45th street and Madison avenue, New York City, adjacent to the Grand Central Terminal, whose beautiful building at that point was given to the association by the late Cornelius Vanderbilt, is to have a large new building, three blocks north and one block east of its present location; and the \$500,000 necessary for the purpose has already been subscribed. The land at the new location is given by the New York Central & Hudson River Railroad. It is bounded on the east by Park avenue, on the south by 49th street and on the north by 50th street; and its depth west from Park avenue is 67 ft. The new building will be six stories high and will have about 70,000 sq. ft. of floor space. It will be the most elaborate institution of the kind in the country, and probably in the world, and will have 250 sleeping rooms. The walls will be of white brick trimmed with white granite. Park avenue, running north and south above the tracks of the approach to the Grand Central Terminal and extending southward through the center of the yard to the station building at 45th street, will be one of the most beautiful streets in the city. It is understood that members of the Vanderbilt family

are large subscribers to the building fund. The site of the present building is needed for other purposes, and, being disposed of in this way, it will furnish a considerable part of the money for the new building.

City Club of Chicago Dissects Chicago's Transportation Problem.

The City Club of Chicago this week concluded a series of discussions and exhibitions on Chicago's Transportation Problem. On Monday, May 27, F. A. Delano, president of the Wabash, described briefly the transportation proposals of the Commercial Club and sketched a history of the various attempts that have been made to organize a scientific system of terminals for Chicago, saying he thought that the desired conditions were now nearer fulfillment than ever before, but that the railways had made no progress whatever in lowering the cost of handling freight at terminals.

On May 28 L. T. Jamme, chief engineer, Chicago Transfer & Terminal Company, spoke on freight interchange in Chicago, emphasizing the need of a system for interchanging through freight outside of the congested district so that no through traffic need be brought into the city.

On May 29 Charles J. Harth, manager J. C. Zipprich Teaming Company; Oscar F. Bell, traffic manager Crane Company; C. O. Frisbie, traffic manager Armour & Co., and James J. Wait, president Merchants' Lighterage Company, discussed various methods of local freight collection and delivery.

On Monday, June 3, W. F. M. Goss, director engineering department of the University of Illinois and a member of the Chicago Association of Commerce committee on Smoke Abatement and Electrification, discussed the subject of railway electrification, emphasizing the enormous cost that would be involved in changing the motive power of all the railways in the city, which, he said, the Association of Commerce committee would be in a position to report on in the course of another year. He said that the committee is performing its work in a manner to command the confidence of the community in its findings, and urged that judgment be suspended on the question of electrification until the committee had rendered its report. He suggested that it might be considered that the railways might do more for the benefit of the community by spending the money which electrification would cost for needed improvements of other kinds, such as block signaling, double-tracking and improvement of terminal facilities.

Among the exhibits are a collection of maps prepared by Charles K. Mohler, consulting engineer, showing the growth of steam railways in Chicago by five-year periods since 1850; a map showing the number of railway crossings; plans showing the transportation proposals of the Commercial Club; a relief map prepared by H. H. Evans, secretary of the city council committee on local transportation, showing the density of population in different parts of the city, and the location with reference to population of transportation lines.

The Travel Show.

The Travel Show, held under the auspices of the Transportation Club of New York at the New Grand Central Palace, New York, during the week beginning May 27, was an interesting exhibition of the development of ways and means of transportation. Almost every device that was ever used to facilitate travel by land, water or air was shown in its early stages of development and contrasted to the most modern and improved type. Among the most interesting features was a full-size model of the first railway train ever run in the State of New York. The original train, which consisted of the De Witt-Clinton locomotive and three stage coaches converted for use on rails, ran from Albany to Schenectady on August 9, 1831, attaining a speed of 15 miles an hour. The locomotive was of the 0-4-0 type, with 52-in. driving wheels and 5½-in. x 16-in. cylinders, and, with the tender, weighed six tons. It was operated from the tender and wood was used for fuel. Another interesting exhibit was a model of the Empire State Express locomotive of 1891, which was shown in operation. This model was about 7 ft. long and was capable of generating power from its own boiler. It was built at a cost of \$5,500. There was also a model of the entire line of the Cincinnati Southern showing every detail of construction, including stations, yards, bridges, cuts and

fills, rolling stock, and even telegraph poles and wires. A section of the first rail used by the New York Central was also exhibited. An original stage coach of Wells, Fargo & Company, which was built in 1858 and which once covered 20 miles in one hour and 34 minutes, was shown. An automobile was shown which was built by the Columbia Motor Company in 1895 and was not taken out of service until 1909. It was claimed that this was the first automobile that was ever used in this country. A fully equipped and inflated balloon was suspended in the center of the room, and models of various air craft, including the Zeppelin dirigible, were suspended nearby. Two aeroplanes were also shown. The sledge used by Peary in the discovery of the North Pole was exhibited, with a team of eight stuffed dogs hitched to it. The War Department had lent a large relief map of the Panama canal, and the Department of Agriculture had an interesting exhibit of the methods of construction of the various types of roads.

Tony Donatto.

His was an unknown name in this city Monday, unknown that is to all but those who knew him in his social and work-a-day world. Today, he stands forth as a hero, a man who gave his life that others might be saved. The story is the more impressive because of its simplicity. There was no brilliant stage setting. He was at work with his fellows upon the tracks of the New Haven railway when the warning of the approach of a fast express train was given. The men jumped away, but he went back to remove a tie that had carelessly been left on the tracks and would have wrecked the train with a probable heavy loss of life. The act cost him his life and deprived his family of his support. No more impressive sacrifice can be conceived of, and no additional words are needed to bring it home to a generous world. It should become, as it doubtless will become, the gentle duty of the corporation to see that his family never come to want, or lack the protection the victim of his own sense of duty afforded them.—*New Haven (Conn.) Journal-Courier.*

Safety Committees for New York Central Lines.

Safety committees have been organized on the New York Central Lines west of Buffalo under the supervision of Vice-President A. H. Smith. A general safety committee includes the assistants to the vice-president, the general manager of the Lake Shore, the general manager of the Big Four, the general manager of the Michigan Central, the general superintendent of the Indiana Harbor Belt, the general claims attorney and the general safety agent. As previously announced, George H. Bradshaw, assistant to the claims attorney of the New York Central & Hudson River, has been appointed general safety agent, with headquarters at Chicago, and will be secretary of the general committee. In addition, a central safety committee has been appointed for each line, including the assistant general manager, general superintendent, assistant chief engineer, superintendent of motive power, signal engineer, mechanical engineer, inspector of freight transportation and chief claim agent. Division safety committees have also been appointed and shop committees will be appointed at the larger shops. The central division and shop committees will meet at least once a month.

M. M. and M. C. B. Associations.

The program for the M. M. and M. C. B. conventions at Atlantic City, is as follows:

MASTER CAR BUILDERS.

Wednesday, June 12, 1912.

9:30 a. m. to 1:30 p. m.

Address by the president..... 9:30 a. m. to 10:30 a. m.
Reading the minutes of the last meeting..... 10:30 a. m. to 10:35 a. m.
Report of secretary and treasurer..... 10:35 a. m. to 10:50 a. m.
Miscellaneous business..... 10:50 a. m. to 11:20 a. m.
Discussion of reports on:
Nominations 11:20 a. m. to 11:30 a. m.
Revision of Constitution..... 11:30 a. m. to 11:45 a. m.
Revision of Standards and Recommended Practice 11:45 a. m. to 12:00 m.
Train Brake and Signal Equipment..... 12:00 m. to 12:30 p. m.

Brake Shoe Equipment..... 12:30 p. m. to 1:00 p. m.
Car Wheels 1:00 p. m. to 1:30 p. m.

Thursday, June 13, 1912.

9:30 a. m. to 1:30 p. m.

Discussion of reports on:

Safety Appliances 9:30 a. m. to 10:00 a. m.
Rules of Interchange..... } 10:00 a. m. to 10:30 a. m.
Prices for Labor and Materials..... }
Rules for Loading Materials..... 10:30 a. m. to 10:45 a. m.
Damage to Freight Equipment by Unloading Machines 10:45 a. m. to 11:00 a. m.
Overhead Inspection 11:00 a. m. to 11:15 a. m.
Coupler and Draft Equipment..... 11:15 a. m. to 12:15 p. m.
Car Trucks 12:15 p. m. to 12:30 p. m.
Springs for Car Trucks..... 12:30 p. m. to 1:00 p. m.
Consolidation 1:00 p. m. to 1:10 p. m.
Train Lighting and Equipment..... 1:10 p. m. to 1:30 p. m.

Friday, June 14, 1912.

9:30 a. m. to 1:30 p. m.

Individual paper on:

Car Shop Apprentices, by I. S. Downing (L. S. & M. S.)..... 9:30 a. m. to 10:00 a. m.

Discussion of reports on:

Train Pipe and Connections for Steam Heat 10:00 a. m. to 10:30 a. m.
Tank Cars 10:30 a. m. to 11:00 a. m.
Specifications for Tests of Steel Truck Sides and Bolsters..... 11:00 a. m. to 11:30 a. m.
Capacity Marking of Cars..... 11:30 a. m. to 11:45 a. m.
Lettering Cars 11:45 a. m. to 12:00 m.
Unfinished business; Reports of Committees on Correspondence, Resolutions, and such other committees as may be named during the convention 12:00 m. to 12:15 p. m.
Election of Officers..... 12:15 p. m. to 1:30 p. m.

MASTER MECHANICS.

Monday, June 17, 1912.

9:30 a. m. to 1:30 p. m.

Prayer 9:30 a. m. to 9:35 a. m.
Address of president..... 9:35 a. m. to 9:50 a. m.
Action on minutes of convention of 1911.. 9:55 a. m. to 10:00 a. m.
Reports of Secretary and Treasurer..... 10:00 a. m. to 10:15 a. m.
Miscellaneous business 10:15 a. m. to 10:45 a. m.
Discussion of reports on:

Advisory, Technical 10:45 a. m. to 11:00 a. m.
Mechanical Stokers 11:00 a. m. to 11:30 a. m.
Revision of Standards..... 11:30 a. m. to 12:00 m.
Specifications for Cast-steel Locomotive Frames 12:00 m. to 1:30 p. m.

Tuesday, June 18, 1912.

9:30 a. m. to 1:30 p. m.

Discussion of reports on:

Main and Side Rods..... 9:30 a. m. to 10:00 a. m.
Consolidation 10:00 a. m. to 10:15 a. m.
Safety Valves 10:15 a. m. to 10:45 a. m.
Safety Appliances 10:45 a. m. to 11:00 a. m.
Design, Construction and Maintenance of Locomotive Boilers..... 11:00 a. m. to 12:00 m.
Contour of Tires..... 12:00 m. to 12:30 p. m.

Individual paper on:

Increased Power Obtained with Superheat as Compared with the Maximum Power Obtained with Saturated Steam, Prof. C. H. Benjamin and Prof. L. E. Endsley..... 12:30 p. m. to 1:00 p. m.
Steel Tires 1:00 p. m. to 1:30 p. m.

Wednesday, June 19, 1912.

9:30 a. m. to 1:30 p. m.

Discussion of reports on:

Flange Lubrication 9:30 a. m. to 10:30 a. m.
Minimum Requirements for Headlights..... 10:30 a. m. to 11:00 a. m.

Standardization of Tinware.....	11:00 a. m. to 11:15 a. m.
Maintenance of Superheater Locomotives	11:15 a. m. to 12:00 m.
Engine Tender Wheels.....	12:00 m. to 12:30 p. m.
Resolutions, Correspondence, etc.....	12:30 p. m. to 12:40 p. m.
Unfinished Business	12:40 p. m. to 12:45 p. m.
Election of Officers.....	
Closing Exercises	12:45 p. m. to 1:30 p. m.

Railway Signal Association.

The regular New York meeting of the Railway Signal Association will be held at the Hotel Astor on Wednesday and Thursday, June 12-13, the Thursday morning session beginning at ten o'clock. Preliminary reports will be made by committees 2, 3, 5, 6, 7, 8, and 9, and by the special committee on storage batteries. It is planned to discuss these reports as follows: Wednesday, committee No. 3, Power Interlocking, Specifications for Mechanical and Electric Releases, for Vitrified Conduits for Fibre Conduits, and for Protection to Drawbridges by Power Interlocking; committee No. 5, Manual Block Signaling, Diagrams for Discussion, Showing the Development from a Simple Manual Block Station, without Siding, to a Complete Equipment; committee No. 9, Wires and Cables, Proposed Changes in Existing Specifications; committee on storage batteries, Specifications for Lead Type Storage Batteries for Power Stations, Thursday; committee No. 2, Mechanical Interlocking, Seven Drawings for Tower Leadouts; committee No. 6, Standard Designs, Drawings for Pipe Carrier, Cable Post and Cast Iron Relay Box; committee No. 7, Definitions of Technical Terms; committee No. 8, Electric Railway Signaling, Specifications for Oil Cooled Transformers and Impedance Bonds.

The May number of the journal of the association contains these reports, and also the proceedings of the meeting which was held at Chicago last March.

American Society of Civil Engineers.

At the regular business meeting of the American Society of Civil Engineers, held June 5, a paper by C. E. Grunsky, M. American Society of Civil Engineers, entitled *The Appraisal of Public Service Properties as a Basis for the Regulation of Rates*, was presented for discussion. This paper was printed in the *Proceedings* for April, 1912.

MEETINGS AND CONVENTIONS.

The following list gives names of secretaries, dates of next or regular meetings, and places of meeting.

AIR BRAKE ASSOCIATION.—F. M. Nellis, 53 State St., Boston, Mass.
 AMERICAN ASSOCIATION OF DEMURRAGE OFFICERS.—A. G. Thomaston, Boston, Mass.
 AMERICAN ASSOCIATION OF GENERAL PASSENGER AND TICKET AGENTS.—W. C. Hope, New York; next convention, September 12, Seattle, Wash.
 AMERICAN ASSOCIATION OF FREIGHT AGENTS.—R. O. Wells, East St. Louis, Ill.; annual, June 18-21, Detroit, Mich.
 AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.—O. G. Fetter, Carew building, Cincinnati, Ohio; 3d Friday of March and September.
 AMERICAN ELECTRIC RAILWAY ASSOCIATION.—H. C. Donecker, 29 W. 39th St., New York. Convention, October 7-11, Chicago.
 AMERICAN ELECTRICAL RAILWAY MANUFACTURERS' ASSOC.—George Keegan, 165 Broadway, New York. Meetings with Am. Elec. Ry. Assoc.
 AMERICAN RAILWAY ASSOCIATION.—W. F. Allen, 75 Church St., New York.
 AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.—C. A. Lichty, C. & N. W., Chicago. Convention, 3d week in Oct., Baltimore, Md.
 AMERICAN RAILWAY ENGINEERING ASSOCIATION.—E. H. Fritch, Monadnock Block, Chicago.
 AMERICAN RAILWAY MASTER MECHANICS' ASSOC.—J. W. Taylor, Old Colony building, Chicago. Convention, June 17-19, Atlantic City, N. J.
 AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—M. H. Bray, N. Y. N. H. & H., New Haven, Conn. Convention, July 9, Chicago.
 AMERICAN SOCIETY FOR TESTING MATERIALS.—Prof. E. Marburg, University of Pennsylvania, Philadelphia, Pa.
 AMERICAN SOCIETY OF CIVIL ENGINEERS.—C. W. Hunt, 220 W. 57th St., New York; 1st and 3d Wed., except June and August, New York.
 AMERICAN SOCIETY OF ENGINEERING CONTRACTORS.—J. R. Wemlinger, 13 Park Row, New York; 2d Tuesday of each month, New York.
 AMERICAN SOCIETY OF MECHANICAL ENGINEERS.—Calvin W. Rice, 29 W. 39th St., New York.
 AMERICAN WOOD PRESERVERS' ASSOCIATION.—F. J. Angier, B. & O., Baltimore, Md. Convention, 3d week in January, 1913, Chicago.
 ASSOCIATION OF AMERICAN RAILWAY ACCOUNTING OFFICERS.—C. G. Phillips, 143 Dearborn St., Chicago; annual, June 26, 1912, Quebec, Que.

ASSOCIATION OF RAILWAY CLAIM AGENTS.—J. R. McSherry, C. & E. I., Chicago.
 ASSOCIATION OF RAILWAY ELECTRICAL ENGINEERS.—Jos. A. Andreucetti, C. & N. W. Ry., Chicago. Semi-annual, June 11, Atlantic City, N. J.; annual, October 21-25, Chicago.
 ASSOCIATION OF RAILWAY TELEGRAPH SUPERINTENDENTS.—P. W. Drew, 135 Adams St., Chicago.
 ASSOCIATION OF TRANSPORTATION AND CAR ACCOUNTING OFFICERS.—G. P. Conard, 75 Church St., New York. Convention, June 25-26, Bluff Point, N. Y.
 CANADIAN RAILWAY CLUB.—James Powell, Grand Trunk Ry., Montreal, Que.; 2d Tuesday in month, except June, July and Aug., Montreal.
 CANADIAN SOCIETY OF CIVIL ENGINEERS.—Clement H. McLeod, 413 Dorchester St., Montreal, Que.; Thursdays, Montreal.
 CAR FOREMEN'S ASSOCIATION OF CHICAGO.—Aaron Kline, 841 North 50th Court, Chicago; 2d Monday in month, Chicago.
 CENTRAL RAILWAY CLUB.—H. D. Vought, 95 Liberty St., New York; 2d Thurs. in Jan. and 2d Fri. in March, May, Sept., Nov., Buffalo, N. Y.
 CIVIL ENGINEERS' SOCIETY OF ST. PAUL.—L. S. Pomeroy, Old State Capitol building, St. Paul, Minn.; 2d Monday, except June, July, August and September, St. Paul.
 ENGINEERS' SOCIETY OF PENNSYLVANIA.—E. R. Dasher, Box 704, Harrisburg, Pa.; 1st Monday after 2d Saturday, Harrisburg, Pa.
 ENGINEERS' SOCIETY OF WESTERN PENNSYLVANIA.—E. K. Hiles, 803 Fulton building, Pittsburgh; 1st and 3d Tuesday, Pittsburgh, Pa.
 FREIGHT CLAIM ASSOCIATION.—Warren P. Taylor, Richmond, Va.
 GENERAL SUPERINTENDENTS' ASSOCIATION OF CHICAGO.—E. S. Koller, 226 W. Adams St., Chicago; Wed. preceding 3d Thurs., Chicago.
 INTERNATIONAL RAILWAY CONGRESS.—Executive Committee, 11, rue de Louvain, Brussels, Belgium. Convention, 1915, Berlin.
 INTERNATIONAL RAILWAY FUEL ASSOCIATION.—D. B. Sebastian, La Salle St. Station, Chicago.
 INTERNATIONAL RAILWAY GENERAL FOREMEN'S ASSOCIATION.—L. H. Bryan, Brown Marx building, Birmingham, Ala. Convention, July 23-26, Chicago.
 INTERNATIONAL RAILROAD MASTER BLACKSMITHS' ASSOCIATION.—A. L. Woodworth, Lima, Ohio. Convention, August 15, Chicago.
 MASTER BOILER MAKERS' ASSOCIATION.—Harry D. Vought, 95 Liberty St., New York.
 MASTER CAR BUILDERS' ASSOCIATION.—J. W. Taylor, Old Colony building, Chicago. Annual convention, June 12-14, Atlantic City, N. J.
 MASTER CAR AND LOCOMOTIVE PAINTERS' ASSOC. OF U. S. AND CANADA.—A. P. Dane, B. & M., Reading, Mass. Convention, September 10-13, Denver, Col.
 NATIONAL RAILWAY APPLIANCE ASSOC.—Bruce V. Crandall, 537 So. Dearborn St., Chicago. Meetings with Am. Ry. Eng. Assoc.
 NEW ENGLAND RAILROAD CLUB.—G. H. Frazier, 10 Oliver St., Boston, Mass.; 2d Tuesday in month, except June, July, Aug. and Sept., Boston.
 NEW YORK RAILROAD CLUB.—H. D. Vought, 95 Liberty St., New York; 3d Friday in month, except June, July and August, New York.
 NORTHERN RAILROAD CLUB.—C. L. Kennedy, C. M. & St. P., Duluth, Minn.; 4th Saturday, Duluth.
 PEORIA ASSOCIATION OF RAILROAD OFFICERS.—M. W. Rotchford, Union Station, Peoria, Ill.; 2d Tuesday.
 RAILROAD CLUB OF KANSAS CITY.—C. Manlove, 1008 Walnut St., Kansas City, Mo.; 3d Friday in month, Kansas City.
 RAILWAY BUSINESS ASSOCIATION.—Frank W. Noxon, 2 Rector St., New York.
 RAILWAY CLUB OF PITTSBURGH.—J. B. Anderson, Penna. R. R., Pittsburgh, Pa.; 4th Friday in month, except June, July and August, Pittsburgh.
 RAILWAY ELECTRICAL SUPPLY MANUFACTURERS' ASSOC.—J. Scribner, 1021 Monadnock Block, Chicago. Meetings with Assoc. Ry. Elec. Engrs.
 RAILWAY GARDENING ASSOCIATION.—J. S. Butterfield, Lee's Summit, Mo.; next meeting, August 13-16, Roanoke, Va.
 RAILWAY INDUSTRIAL ASSOCIATION.—G. L. Stewart, St. L., S. W. Ry., St. Louis, Mo.
 RAILWAY SIGNAL ASSOCIATION.—C. C. Rosenberg, Bethlehem, Pa. Meeting, June 12-13, New York.
 RAILWAY STOREKEEPERS' ASSOCIATION.—J. P. Murphy, Box C, Collinwood, Ohio.
 RAILWAY SUPPLY MANUFACTURERS' ASSOC.—J. D. Conway, 2135 Oliver bldg., Pittsburgh, Pa. Meetings with M. M. and M. C. B. assocs.
 RAILWAY TEL. & TEL. APPLIANCE ASSOC.—W. E. Harkness, 284 Pearl St., New York. Meetings with Assoc. of Ry. Teleg. Sups.
 RICHMOND RAILROAD CLUB.—F. O. Robinson, Richmond, Va.; 2d Monday, except June, July and August.
 ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.—L. C. Ryan, C. & N. W., Sterling, Ill. September 10-13, Buffalo, N. Y.
 ST. LOUIS RAILWAY CLUB.—B. W. Fraumenthal, Union Station, St. Louis, Mo.; 2d Friday in month, except June, July and Aug., St. Louis.
 SIGNAL APPLIANCE ASSOCIATION.—F. W. Edmonds, 3868 Park Ave., New York. Meetings with annual convention Railway Signal Association.
 SOCIETY OF RAILWAY FINANCIAL OFFICERS.—C. Niquist, La Salle St. Station, Chicago.
 SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.—E. W. Sandwich, A. & W. P. Ry., Montgomery, Ala.
 SOUTHERN & SOUTHWESTERN RAILWAY CLUB.—A. J. Merrill, Grant bldg., Atlanta, Ga.; 3d Thurs., Jan., March, May, July, Sept., Nov., Atlanta.
 TOLEDO TRANSPORTATION CLUB.—J. G. Macomber, Woolson Spice Co., Toledo, Ohio; 1st Saturday, Toledo.
 TRAFFIC CLUB OF CHICAGO.—Guy S. McCabe, La Salle Hotel, Chicago; meetings monthly, Chicago.
 TRAFFIC CLUB OF NEW YORK.—C. A. Swope, 290 Broadway, New York; last Tuesday in month, except June, July and August, New York.
 TRAFFIC CLUB OF PITTSBURGH.—D. L. Wells, Erie, Pittsburgh, Pa.; meetings monthly, Pittsburgh.
 TRAIN DESPATCHERS' ASSOCIATION OF AMERICA.—J. F. Mackie, 7042 Stewart Ave., Chicago; annual, June 18, 1912, Louisville, Ky.
 TRANSPORTATION CLUB OF BUFFALO.—J. M. Sells, Buffalo; first Saturday after first Wednesday.
 TRANSPORTATION CLUB OF DETROIT.—W. R. Hurley, L. S. & M. S., Detroit, Mich.; meetings monthly.
 TRAVELING ENGINEERS' ASSOCIATION.—W. O. Thompson, N. Y. C. & H. R., East Buffalo, N. Y.; annual, Aug. 27-30, Chicago.
 WESTERN CANADA RAILWAY CLUB.—W. H. Rosevear, P. O. Box 1707, Winnipeg, Man.; 2d Monday, except June, July and August, Winnipeg.
 WESTERN RAILWAY CLUB.—J. W. Taylor, Old Colony building, Chicago; 3d Tuesday of each month, except June, July and August.
 WESTERN SOCIETY OF ENGINEERS.—J. H. Warder, 1735 Monadnock Block, Chicago; 1st Monday in month, except July and August, Chicago.

Traffic News.

The Munson steamship line announces that beginning June 15 its steamers will make regular sailings from Baltimore to Havana twice a month.

The Bessemer & Lake Erie in the month of May hauled from Lake Erie to the mills of the Pittsburgh district 23,584 cars of ore, 1,115,000 tons. This is 62,000 tons more than was ever before carried over the line in a single month.

It is announced that after its July meeting the Southern Classification Committee will accede to the repeated requests of shippers and publish its dockets regularly, thus enabling interested parties to have a complete knowledge of changes proposed.

Attorney-General Hogan of Ohio has written a letter to the general counsel of each of the railways passing through the state, with reference to the recent action of the Central Passenger Association roads in discontinuing Sunday excursions, in which he attacks the right of the roads to make rate agreements and charges that they have violated their state charters.

The United States District Court for Alabama has issued a decision under which the Central of Georgia and the Western of Alabama will be free to advance rates in Alabama regardless of the statutes of that state which have been declared unconstitutional. The decision of the court is similar to that recently given in the case of the Louisville & Nashville.

Extensive improvements in its suburban service out of Chicago were made on Sunday, June 2, by the Chicago, Burlington & Quincy, by which the runs of many trains were extended out as far as Downers' Grove and Aurora, involving an addition of 15 trains to Aurora. One-hundred pound rails have recently been laid on the line between Chicago and Aurora, and the roadbed will be oiled for the entire distance. The railway has invited criticisms and suggestions relating to the new service by committees representing each community.

The Chicago & Alton recently has made an important addition to its through passenger service to the southwest by establishing in connection with the Gould lines two through standard sleeping car lines from Chicago to Houston and El Paso, Tex., in addition to the through service from Chicago to Little Rock and Hot Springs, Ark., and Chicago to Dallas and San Antonio, which has been established for some two or three years. The Little Rock and Hot Springs car leaves Chicago on the Alton Limited every morning, and reaches Little Rock and Hot Springs early the next morning via the St. Louis, Iron Mountain & Southern. The Houston-El Paso car leaves Chicago on the Alton 9 p. m. train via St. Louis and the St. Louis, Iron Mountain & Southern, International & Great Northern and Texas & Pacific, reaching Houston at 2:10 p. m. the second day, and El Paso at 8:55 a. m. the third day. The Dallas-San Antonio car leaves Chicago on the same train and reaches San Antonio via the Katy Limited at 8:30 p. m. the second day.

With the permission of the New Jersey State Board of Public Utility commissioners, the Pennsylvania Railroad has established a fare of 17 cents on the electric trains between Newark and Jersey City (Summit avenue), which is 2 cents above normal; and each passenger at destination will receive a rebate of 2 cents. The new station at Jersey City is at Summit avenue, a mile or more west of the Hudson river, and the net fare from Newark (six miles) is 15 cents; but as tickets cannot be conveniently examined or punched between Summit avenue and the Manhattan terminus, it is necessary that tickets to New York and to Jersey City shall be dealt with alike; and, of course, if the Summit avenue tickets were sold at a lower rate, there would be passengers who would take the longer ride on the shorter ticket. By the rebate device this little game will be thwarted. Tickets of the Pennsylvania Railroad are now accepted in the Hudson tunnels to and from the uptown stations in Manhattan, as well as to and from the downtown stations, provided the passengers pay 2 cents additional, the tunnel fare to the uptown stations being 7 cents as compared with 5 cents to Church street. For a 5-cent ride the Pennsylvania absorbs the tunnel fare.

The Cotton Crop.

The United States department of agriculture estimates that the condition of the cotton crop on May 25 was 78.9 per cent. of a normal, as compared with 87.8 on May 25, 1911, 82.0 on May 25, 1910, 81.1 on May 25, 1909, and 81.5 the average of the past ten years on May 25.

Comparisons of conditions, by states, follow:

States.	May 25,				
	1912.	1911.	1910.	1909.	Ten-yr. av.
Virginia	89	93	90	85	85
North Carolina.....	87	83	84	83	83
South Carolina.....	83	80	78	83	81
Georgia	74	92	81	84	83
Florida	75	95	80	91	87
Alabama	74	91	83	83	81
Mississippi	72	86	82	78	81
Louisiana	69	91	76	74	80
Texas	86	88	83	78	80
Arkansas	73	87	81	84	82
Tennessee	74	83	86	85	84
Missouri	74	86	87	93	85
Oklahoma	78	87	84	84	84
California	96	95	90	..	..
United States....	78.9	87.8	82.0	81.1	81.5

For the purpose of comparison, the condition of the cotton crop in the United States monthly for the past ten years is given below:

Years.	May 25.	June 25.	July 25.	Aug. 25.	Sept. 25.
1911	87.8	88.2	89.1	73.2	71.1
1910	82.0	80.7	75.5	72.1	65.9
1909	81.1	74.6	71.9	63.7	58.5
1908	79.7	81.2	83.0	76.1	69.7
1907	70.5	72.0	75.0	72.7	67.7
1906	84.6	83.3	82.9	77.3	71.6
1905	77.2	77.0	74.9	72.1	71.2
1904	83.0	88.0	91.6	84.1	75.8
1903	74.1	77.1	79.7	81.2	65.1
1902	95.1	84.7	81.9	64.0	58.3
Average 1902-1911.	81.5	80.7	80.6	73.6	67.5

Canadian Colonization.

The *Wall Street Journal* has been making an investigation of the Canadian situation as respects crop, railway and financial outlook, and the first report on these subjects contains the following:

"The immigration department [of Canada] maintains in the United States a small army of skilled agents to promote the exodus of well-to-do American farmers to the Canadian Northwest. It is said on good authority that the government spends hundreds of thousands of dollars in advertising Canada in the United States, using literally thousands of American publications to create favorable impressions, and yet it is extremely doubtful if the average American can recall having seen any such advertising.

"This work is carried on under the direction of an expert newspaper man, who is an official of the department, and who uses the services of one of the large United States advertising agencies, which places a vast amount of reading matter concerning western Canada in a great number of country and farm papers. A great deal of this matter is placed in papers printed in foreign languages in the middle western states and is very skillfully written, so as to leave a favorable impression and to rouse a desire to know more about Canada. It is at this point that the immigration agent begins his work.

"In many cases he rents the best store in town, fills it with an attractive exhibit of Canadian grains, ingratiates himself with the people of the neighborhood, courteously answers all their questions, distributes well-arranged and skillfully written literature, printed in all the different languages spoken in the western states, gives useful information and advice about places in which to settle, and carries on his campaign right up to the point of inducing the American farmers to sell their land at the high prices prevailing and getting them to load their household effects, machinery and live stock on special trains headed for the Canadian west. This work goes on continuously, but with special activity during the idle winter months and is carried on in hundreds of places, even as far south as Missouri, from which there is a tremendous movement of exceptionally well-to-do native Americans this spring.

"The Canadian Pacific, Grand Trunk Pacific, Canadian Northern and other roads supplement the work of the immigration department with special agents who arrange for the necessary transportation. The government recognizes that the American settler is the real backbone of the Canadian west,

and in spite of the fact that an occasional politician voices alarm at the Yankee invasion, the government is applying its very best energies to promoting the movement.

"For the most part the settlers make new communities of their own, each male adult in many instances taking up a quarter-section of 160 acres of free land and buying as much more as he can at \$10, \$20 or \$30 an acre with the proceeds of the sales of their Iowa, Minnesota, Oklahoma, Kansas, Nebraska, Ohio and Missouri farms which they have sold for from \$100 to \$200 an acre. Much travel and observation in the Prairie provinces disclosed the fact that the average American settler takes the oath of allegiance and becomes a British subject at the earliest possible moment. They like the Canadian form of government and their children are growing up as good Canadians."

Car Surpluses and Shortages.

Arthur Hale, chairman of the committee on relations between railways of the American Railway Association in presenting statistical bulletin No. 119A, giving a summary of car surpluses and shortages by groups from January 18, 1911, to May 23, 1912, says:

"The total surpluses on May 23, 1912, was 123,683 cars; on May 9, 1912, was 136,776 cars; and on May 24, 1911, was 168,233 cars. Compared with the preceding period there is a decrease in the total surplus of 13,093 cars, of which 12,444 are coal cars, indicating greater activity in coal and ore traffic. There is a net increase in box car surplus of 2,672 cars, which is general throughout the country except in groups 2 (New York, New Jersey, Delaware, Maryland and eastern Pennsylvania), 5 (Kentucky, Tennessee, Mississippi, Alabama, Georgia and Florida) and 7 (Montana, Wyoming and Nebraska), where slight decreases are shown.

"The total shortage on May 23, 1912, was 7,482 cars; on May

9, 1912, was 6,678 cars; and on May 24, 1911, was 835 cars. Compared with the preceding period there is an increase in the total shortage of 804 cars. The shortage in box car and miscellaneous equipment decreased 376 and 400 cars respectively, but an increase of 1,416 cars in coal car equipment is shown, chiefly in groups 2 (as above) and 4 (the Virginias and Carolinas). Compared with the same date of 1911 there is a decrease in the total surplus of 44,550 cars, of which 27,897 is in box, 3,688 in flat, 2,145 in coal and 10,280 in miscellaneous cars."

The accompanying table gives car surplus and shortage figures by groups for the last period covered in the report, and the diagram shows total bi-weekly surpluses and shortages from 1907 to 1912.

Revenues and Expenses of Steam Roads.

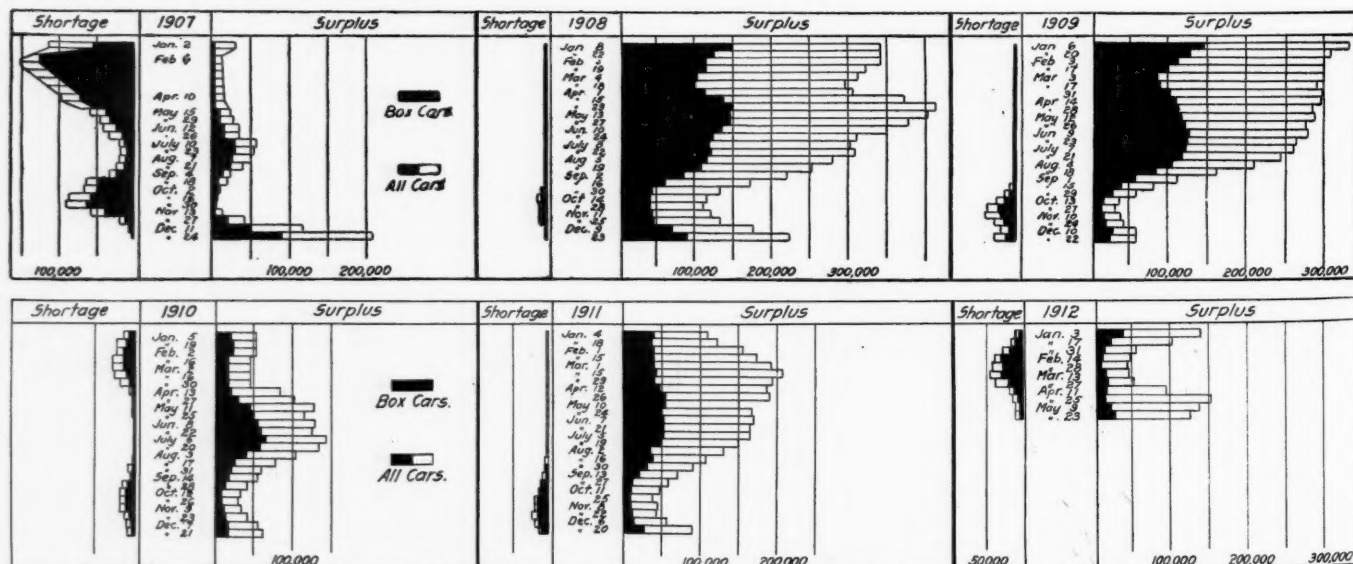
Bulletin No. 33 of the Bureau of Railway Economics gives a summary of earnings and expenses in March. The railways whose returns are included in this bulletin operate 218,488 miles of line, or nearly 90 per cent. of all the steam railway mileage in the United States. The total operating revenues for the month of March, 1912, amounted to \$230,563,885. Compared with March, 1911, the total operating revenues of these railways show an increase of \$12,661,901. These total operating revenues per mile of line amounted to \$1,055 in March, 1912, and \$1,016 in March, 1911, an increase for 1912 of \$39, or 3.9 per cent. This increase was the resultant of an increase of 6.3 per cent. in the freight revenue together with slight increases in other transportation and non-transportation revenue on the one hand, and a decrease of 3.8 per cent. in passenger revenue on the other hand.

Operating expenses amounted to \$163,705,773. This was \$12,152,394 more than for March, 1911. These operating expenses per mile of line amounted to \$749 in March, 1912, and \$707 in March, 1911, an increase for 1912 of \$43 per mile, or 6.0 per cent. In the cost per mile of maintaining equipment there was an in-

CAR SURPLUSES AND SHORTAGES.

Date.	No. of roads.	Surpluses					Shortages				
		Box.	Flat.	Coal gondola and hopper.	Other kinds.	Total.	Box.	Flat.	Coal gondola and hopper.	Other kinds.	Total.
Group *1.—May 23, 1912.....	7	322	338	1,993	205	2,858	162	120	197	0	479
" 2.—" 23, 1912.....	23	1,468	89	33,537	1,609	36,703	47	15	684	53	799
" 3.—" 23, 1912.....	25	3,438	120	17,986	2,805	24,349	19	250	20	202	491
" 4.—" 23, 1912.....	10	2,217	20	434	1,234	3,905	1,215	440	1,273	5	2,933
" 5.—" 23, 1912.....	15	1,480	10	4,905	1,622	8,017	13	166	125	0	304
" 6.—" 23, 1912.....	25	4,222	363	3,499	4,275	12,359	121	24	325	6	476
" 7.—" 23, 1912.....	4	216	34	442	548	1,240	60	0	25	0	85
" 8.—" 23, 1912.....	18	3,560	401	5,551	2,738	12,250	0	100	0	0	100
" 9.—" 23, 1912.....	10	702	178	362	1,442	2,684	100	0	0	0	100
" 10.—" 23, 1912.....	20	5,622	2,429	2,353	8,370	18,774	8	0	0	7	15
" 11.—" 23, 1912.....	6	51	71	6	416	544	1,173	503	0	24	1,700
Total	163	23,298	4,053	71,068	25,264	123,683	2,918	1,618	2,649	297	7,482

*Group 1 is composed of New England lines; Group 2—New York, New Jersey, Delaware, Maryland and Eastern Pennsylvania lines; Group 3—Ohio, Indiana, Michigan and Western Pennsylvania lines; Group 4—West Virginia, Virginia, North and South Carolina lines; Group 5—Kentucky, Tennessee, Mississippi, Alabama, Georgia and Florida lines; Group 6—Iowa, Illinois, Wisconsin, Minnesota and the Dakotas lines; Group 7—Montana, Wyoming and Nebraska lines; Group 8—Kansas, Colorado, Missouri, Arkansas and Oklahoma lines; Group 9—Texas, Louisiana and New Mexico lines; Group 10—Oregon, Idaho, California and Arizona lines; Group 11—Canadian lines.



Car Surpluses and Shortages in 1907 to 1912.

crease compared with March, 1911, of 9.1 per cent; in the cost per mile of conducting transportation an increase of 8.1 per cent.; and in traffic expenses per mile an increase of 5.0 per cent.; while in the cost per mile of maintaining way and structures there was a decrease of 2.6 per cent.; and in general expenses per mile a decrease of 3.4 per cent.

Net operating revenue amounted to \$66,858,112. This was \$509,507 more than for March, 1911. This increase was due to the increase in mileage in 1912. Thus net operating revenue per mile of line amounted to \$306 in March, 1912, and \$309 in March, 1911, a decrease for 1912 of \$3 per mile, or 1.1 per cent. The net operating revenue for each mile of line for each day in March, 1912, averaged \$9.87, and for March, 1911, \$9.98.

Taxes for the month of March amounted to \$9,576,575, or \$44 per mile, an increase of 8.0 per cent. over March, 1911.

The operating ratio for March, that is, the per cent. of total operating revenues which was absorbed in operating expenses, was 71.0 per cent., which is comparable with 73.7 per cent. in February, 1912, and 69.6 per cent. in March, 1911.

The eastern group of railways show an increase in total operating revenues per mile of line as compared with March, 1911, of 9.8 per cent., and the southern group an increase of 2.4 per cent.; the western group shows a decrease of 1.7 per cent. Operating expenses per mile increased 8.8 per cent. on the eastern

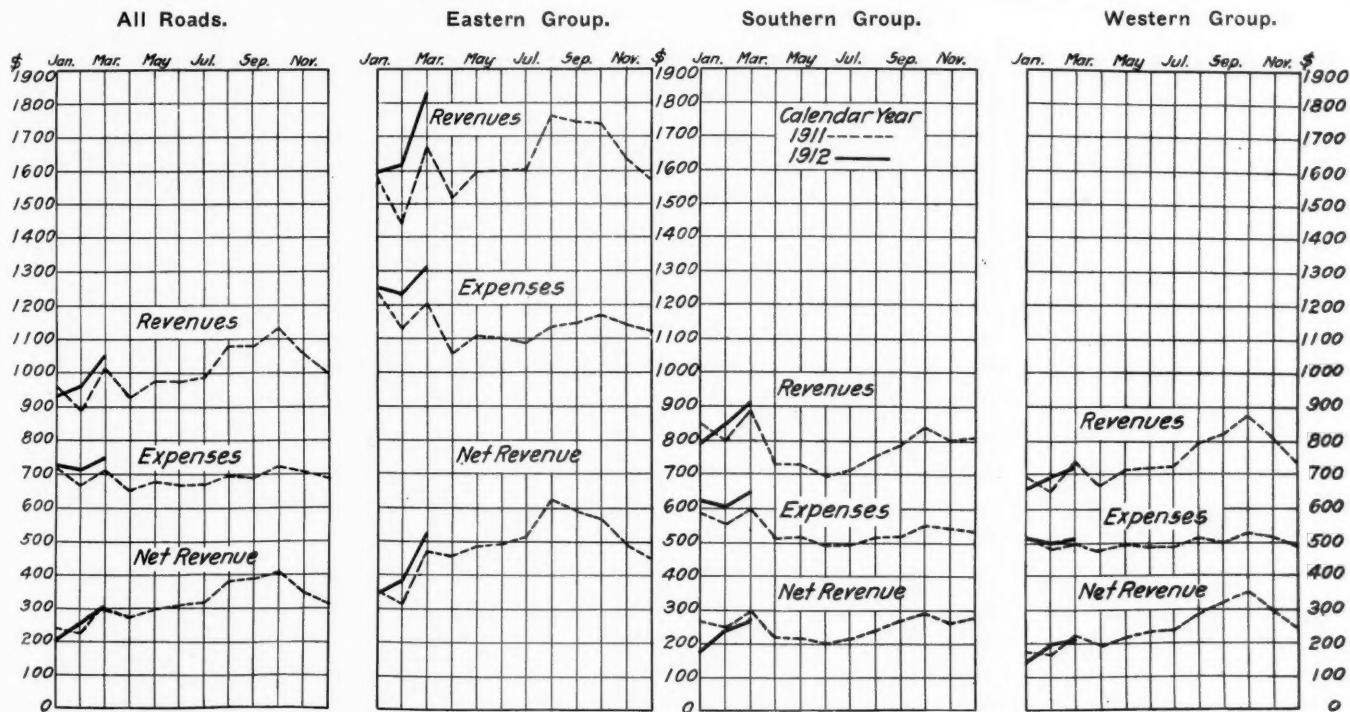
are not cumulative, and the lines connecting the dots have no significance.

Per cent. of total operating revenue.	March, 1912.	March, 1911.	Fiscal year ended		Calendar year ended	
			June 30, 1911.	June 30, 1910.	Dec. 31, 1911.	Dec. 31, 1910.
Maintenance of way and structures	10.6	11.3	12.5	12.7	12.7	13.3
Maintenance of equipment	16.9	16.1	14.9	14.5	15.5	15.3
Traffic expenses	2.1	2.1	2.1	2.0	2.1	2.1
Transportation expenses	38.9	37.4	34.2	32.2	35.4	34.7
General expenses	2.5	2.7	2.4	2.3	2.6	2.4
Total operating expenses	71.0	69.6	66.1	63.7	68.3	67.8

New York City Subway Contract.

Comptroller Prendergast has sent a recommendation to the Board of Estimate that consent be given to the award and proposed contract between the O'Rourke Engineering Construction Company and the city, for the construction of Section 2A of the Lexington avenue subway, which extends along Broadway, from Walker street to Howard street; and that corporate stock to the extent of \$912,351 be issued to pay the amount of the contract.

The Board of Estimate will also consider a recommendation of the Public Service Commission, at its meeting on Friday,



Monthly Revenues and Expenses Per Mile in 1911 and 1912.

railways as compared with March, 1911, 8.0 per cent. on the Southern railways, and 2.3 per cent. on the western railways. In the eastern group net operating revenue per mile increased 12.2 per cent. as compared with March, 1911; in the southern group it decreased 8.9 per cent., and in the western group it decreased 10.4 per cent. The increase in taxes per mile compared with March, 1911, was 8.2 per cent. in the eastern group, was negligible in the southern group, and was 10.7 per cent. in the western group.

Comparison of the returns for the nine months of the fiscal year 1912 with those of the corresponding months of the fiscal year 1911 shows a decrease in total operating revenues per mile of 0.4 per cent., a decrease in operating expenses per mile of 0.1 per cent., and a decrease in net operating revenue per mile of 0.9 per cent. This net operating revenue per mile of the eastern group of railways increased 7.7 per cent. as compared with the corresponding period for 1911, that of the southern group decreased 7.2 per cent., and that of the western group decreased 5.9 per cent.

The accompanying diagram shows the average earnings and expenses per mile of road of the railways reporting. The dots on the vertical lines are alone of significance, since the figures

for establishing eight new routes and general plans of construction for additional rapid transit railways in the boroughs of Brooklyn, Manhattan, Bronx and Queens, as recommended by the Public Service Commission and approved by Mayor Gaynor.

INTERSTATE COMMERCE COMMISSION.

The commission has suspended the advances in rates on malt from Minneapolis, Minn., to Kansas City, Mo. The advances ranged from 2.5 cents to 3.75 cents per 100 lbs.

The commission has postponed from January 1, 1911, to July 1, 1912, the effective date of its order requiring uniform system of accounts of operating expenses of water carriers.

The commission has suspended the tariff of the southwestern lines which eliminates certain points in western Texas from the application of the so-called Texas common point rates on interstate traffic. The advances which have been suspended apply to nearly all commodities and range from two to 11 cents per 100 lbs.

REVENUES AND EXPENSES OF RAILWAYS.

MONTH OF APRIL, 1912.

Name of road.	Mileage operated at end of period.	Operating revenues			Operating expenses			Net operating revenue (or deficit).	Outside operations, net.	Taxes.	Operating income (or loss).	Increase (or decrease) income last year.
		Freight.	Passenger.	Total.	Way and structures.	Maintenance of equipment.	Traffic.	Trans- portation.				
Atlanta, Birmingham & Atlantic.	662	\$195,602	\$45,487	\$241,089	22,834	57,876	7,871	126,388	236,635	\$12,762	\$15,700	\$4,680
Atlantic & St. Lawrence.	167	95,760	30,540	126,300	8,833	21,113	1,807	30,479	128,110	3,732	6,659	7,922
Atlantic Coast Line.	4,451	2,193,206	737,228	2,930,434	319,665	16,386	4,229	83,909	2,039,755	130,000	1,029,436	91,235
Baltimore & Ohio Chicago Terminal.	77	206,286	52,536	258,822	125,204	13,523	3,099	106,579	281,114	20,925	8,115	1,548
Bangor & Aroostook.	628	541,933	22,834	564,767	276,327	28,811	3,422	96,454	171,790	10,575	93,962	4,392
Bessemer & Lake Erie.	204	541,933	22,834	564,767	276,327	28,811	3,422	96,454	171,790	10,575	93,962	4,392
Buffalo & Susquehanna R. R.	265	58,753	7,625	66,378	71,713	24,831	1,807	30,479	128,110	3,732	6,659	7,922
Buffalo & Susquehanna R. R.	91	14,162	7,625	21,787	23,923	6,920	1,807	15,787	40,331	12,343	17,000	11,676
Buffalo, Rochester & Pittsburgh.	572	469,032	83,169	552,201	572,284	87,059	10,392	221,145	47,542	7,000	40,542	11,676
Canadian Pacific Lines in Maine.	233	124,828	62,677	187,505	201,753	19,454	2,299	103,269	7,794	8,000	88,785	37,441
Carolina, Clinchfield & Ohio.	278	176,736	10,416	187,152	150,296	16,455	22,917	39,715	93,511	5,181	10,542	3,929
Central of New Jersey.	18	1,044,857	410,607	1,455,464	1,537,177	228,452	27,341	673,929	1,302,251	132,111	59,586	88,785
Central New England.	277	249,369	25,997	275,366	291,462	34,538	73,767	73,767	139,292	9,000	143,124	33,982
Charleston & Western Carolina.	341	143,912	26,318	170,230	177,594	33,103	3,053	70,599	141,130	5,000	31,464	7,249
Chicago & Alton.	1,026	560,293	306,510	866,803	956,244	112,049	37,393	421,867	734,111	43,500	176,109	160,280
Chicago & Eastern Illinois.	1,275	637,522	225,420	862,942	968,964	146,491	30,161	429,532	707,713	37,500	213,460	98,438
Chicago & Northwestern.	7,951	3,676,801	1,421,623	5,098,424	6,101,111	722,125	107,660	2,501,183	120,313	302,000	1,330,592	249,008
Chicago, Burlington & Quincy.	9,074	4,523,215	1,563,403	6,086,618	6,226,130	1,594,591	120,146	2,363,215	5,189,045	263,013	1,233,923	171,487
Chicago Great Western.	1,496	717,128	212,197	929,325	1,013,578	146,177	45,812	483,950	841,943	3,090	135,506	50,426
Chicago, Peoria & St. Louis.	255	96,016	24,856	120,872	128,355	22,762	7,166	66,407	131,949	4,300	7,894	4,988
Chicago, Rock Island & Gulf.	4,770	156,323	45,582	201,905	218,002	33,398	11,103	82,727	170,039	8,122	39,505	37,293
Chicago, Rock Island & Pacific.	7,565	3,021,234	1,303,582	4,324,816	558,174	584,538	155,679	2,060,468	3,992,692	225,374	919,769	132,491
Chicago, St. Paul, Minneapolis & Omaha.	1,744	760,277	321,555	1,081,832	88,365	148,515	27,437	514,651	1,163,539	63,629	292,647	27,232
Cincinnati, Hamilton & Dayton.	1,015	509,609	113,703	623,312	71,323	139,000	18,669	322,215	568,681	24,893	109,174	1,813
Colorado Midland.	338	99,083	16,482	115,565	24,463	25,463	9,166	59,507	123,869	5,612	8,407	26,020
Cumberland Valley.	162	202,295	50,210	252,505	263,649	44,776	5,059	82,727	173,472	7,033	36,538	59,528
Delaware & Hudson Co.—R. R. Dept.	854	1,364,327	580,915	1,945,242	668,941	79,936	24,979	592,632	1,045,484	168,940	56,537	972,627
Delaware, Lackawanna & Western.	959	1,364,327	580,915	1,945,242	668,941	79,936	24,979	592,632	1,045,484	168,940	56,537	972,627
Detroit & Mackinac.	358	94,114	27,244	121,358	14,769	19,548	3,126	126,753	75,673	8,250	42,892	27,360
Detroit, Grand Haven & Milwaukee.	191	112,000	41,600	153,600	175,525	17,441	4,722	100,532	149,534	2,880	22,990	7,617
Duluth & Iron Range.	200	132,586	21,501	154,087	164,837	46,480	7,669	66,488	160,479	6,372	269,635	66,674
El Paso & Southwestern Co.	902	558,464	79,832	638,296	668,941	79,936	11,908	177,068	375,951	22,238	352,177	119,950
Elgin, Joliet & Eastern.	841	848,193	10	848,203	912,012	86,363	4,351	267,941	536,185	74,423	63,016	71,950
Fort Worth & Denver City.	454	225,861	94,607	320,468	340,006	70,019	6,279	126,753	74,423	10,635	65,522	30,543
Grand Rapids & Indiana.	580	310,489	117,052	427,541	459,734	56,099	9,344	209,103	370,005	23,365	156,348	82,993
Grand Trunk Western.	347	389,000	161,000	550,000	581,765	49,795	69,449	241,811	390,193	5,290	48,624	5,695
Gulf & Ship Island.	308	121,981	27,660	149,641	18,830	28,970	2,192	48,187	108,017	4,928	44,345	1,606
Gulf, Colorado & Santa Fe.	1,597	553,544	200,780	754,324	816,387	108,935	146,237	417,378	32,654	209,633	145,782	67,274
Illinois Central.	4,755	2,689,382	960,361	3,649,743	4,213,854	638,378	1,105,764	1,683,088	3,841,066	30,160	178,160	22,298
Kansas City Southern.	827	512,175	120,949	633,124	83,700	92,852	26,929	269,001	501,182	56,430	132,158	39,069
Long Island.	399	266,018	512,615	778,633	125,474	113,353	14,310	386,257	150,830	4,233	47,501	16,266
Louisiana & Arkansas.	255	112,561	15,856	128,417	133,174	19,509	18,382	36,741	51,734	3,000	15,325	7,660
Louisville, Henderson & St. Louis.	200	62,975	29,971	92,946	100,007	21,993	4,294	38,545	81,615	6,305	158,440	26,152
Maine Central.	1,204	538,451	235,373	773,824	823,570	123,547	8,259	327,570	615,928	42,897	158,440	26,152
Midland Valley.	373	69,732	34,078	103,810	110,882	22,455	2,249	34,514	79,234	5,785	32,436	6,249
Minneapolis & St. Louis.	1,386	484,107	126,821	610,928	88,928	97,651	18,879	289,965	517,225	2,000	102,047	18,140
Monongahela.	65	127,059	2,361	129,420	125,777	19,995	325	24,869	58,608	5,723	95,169	19,647
Nevada Northern.	163	125,685	12,968	138,653	141,757	15,707	362	29,305	76,268	462,795	920,083	96,652
New York Central & Hudson River.	3,597	4,575,517	2,481,355	7,056,872	7,990,917	1,212,318	204,450	3,342,654	6,592,524	1,398,393	1,654,970	22,674
New York, Chicago & St. Louis.	562	776,457	101,990	878,447	101,039	107,741	47,969	421,072	1,953,111	32,000	180,203	18,628
New York, New Haven & Hartford.	2,091	2,748,927	217,641	2,966,568	694,949	694,949	23,758	2,148,421	3,587,980	7,900	1,642,817	18,604
New York, Philadelphia & Norfolk.	112	223,978	37,596	261,574	284,123	55,237	3,708	113,742	124,488	7,500	69,063	20,207
Norfolk Southern.	608	231,453	63,105	294,558	31,209	38,331	5,011	96,636	185,271	36,176	121,446	197,605
Northern Central.	473	669,953	180,754	850,707	912,330	139,198	15,583	488,070	867,288	45,042	8,787	197,605
Northern Pacific.	6,032	3,685,224	1,177,678	4,862,902	5,201,648	651,601	109,806	1,705,888	3,229,975	321,148	1,654,970	199,110
Oregon Short Line.	1,762	1,259,206	356,045	1,615,251	271,341	135,129	47,771	401,979	871,818	57,000	794,689	199,110
Oregon-Washington R. R. & Nav. Co.	1,920	871,193	366,994	1,238,187	1,725,205	271,341	47,771	401,979	871,818	57,000	794,689	199,110
Pennsylvania Co.	1,760	2,889,258	721,817	3,611,075	1,326,929	186,859	44,788	1,616,702	921,001	217,005	444,234	612,363
Pennsylvania Railroad.	4,018	9,619,669	2,762,523	12,382,192	700,018	857,491	84,788	1,616,702	3,354,515	564,472	2,993,221	350,220
Pere Marquette.	2,330	956,431	303,711	1,260,142	1,620,847	258,847	30,911	662,805	1,147,639	51,882	184,828	49,423
Philadelphia, Baltimore & Washington.	713	806,206	68,021	874,227	620,970	274,396	30,874	692,159	1,261,932	49,268	309,770	15,468
Pittsburgh, Cincinnati, Chic. & St. Louis.	1,467	2,314,213	617,320	2,931,533	639,684	66,170	1,282,718	1,282,718	2,481,091	130,001	669,579	25,400
Pittsburgh, Shawmut & Northern.	278	60,107	9,108	69,215	71,326	17,281	1,068	29,569	72,577	1,565	2,816	25,400
Rutland & Grand Island.	468	149,143	92,159	241,302	30,643	54,879	7,538	107,075	206,232	11,932	59,476	2,364
St. Joseph & Grand Island.	319	91,651	28,084	119,735	33,136	27,485	4,502	57,500	127,780	6,396	1,811	3,778
St. Louis Merchants' Bridge Terminal.	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
St. Louis, San Francisco & Texas.	244	81,542	24,169	105,711	112,281	18,262	2,234	52,590	89,806	1,217	21,258	35,445

Operating in previous period: 1,446; 2,236; 3,631; 7,744; 9,091; 10,471; 11,754; 12,819; 13,930; 14,360; 15,191; 16,832; 17,587; 18,307; 19,153; 20,457; 21,180; 22,324; 23,591; 24,040; 24,469; 24,629; 24,646; 24,688; 24,740. —Indicates Deficits, Losses and Decreases.

REVENUES AND EXPENSES OF RAILWAYS.

MONTH OF APRIL, 1912—(CONTINUED).

Name of road.	Mileage operated at end of period.	Operating revenues			Operating expenses			Net operating revenue (or loss).	Outside operations, net.	Operating income (or loss).	Increase (or decrease) comp. with last year.
		Freight.	Passenger.	Total.	Way and structures.	Maintenance of equipment.	Traffic.	Trans- portation.			
San Antonio & Aransas Pass.....	727	\$234,515	\$86,282	\$320,797	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000			
Southern.....	7,090 ¹	3,835,089	1,298,826	5,133,915	1,000,000	1,000,000	1,000,000	1,000,000			
Terminal R. R. Ass'n of St. Louis.....	81	56,644	31,094	87,738	1,000,000	1,000,000	1,000,000	1,000,000			
Toledo, St. Louis & Western.....	35 ¹	250,526	245	250,771	1,000,000	1,000,000	1,000,000	1,000,000			
Trinity & Brazos Valley.....	451	142,294	34,205	176,499	1,000,000	1,000,000	1,000,000	1,000,000			
Union Pacific.....	463	2,656,392	744,243	3,400,635	1,000,000	1,000,000	1,000,000	1,000,000			
Union R. R. of Baltimore.....	3,537 ²	97,870	1,000,000	1,097,870	1,000,000	1,000,000	1,000,000	1,000,000			
Union R. R. of Pennsylvania.....	31	.....	.....	.....	1,000,000	1,000,000	1,000,000	1,000,000			
Vandalia.....	827	406,559	187,315	593,874	1,000,000	1,000,000	1,000,000	1,000,000			
West Jersey & Seashore.....	356 ¹	157,631	301,221	458,852	1,000,000	1,000,000	1,000,000	1,000,000			
Western Maryland.....	543	531,244	68,082	600,326	1,000,000	1,000,000	1,000,000	1,000,000			
Yazoo & Mississippi Valley.....	1,372	385,861	134,599	520,460	1,000,000	1,000,000	1,000,000	1,000,000			
Atlanta, Birmingham & Atlantic.....	662	\$2,076,624	\$553,034	\$2,629,658	1,000,000	1,000,000	1,000,000	1,000,000			
Atlantic & St. Lawrence.....	167	904,852	267,185	1,172,037	1,000,000	1,000,000	1,000,000	1,000,000			
Baltimore & Ohio Chicago Terminal.....	4,545 ¹	18,808,974	7,165,128	25,974,102	1,000,000	1,000,000	1,000,000	1,000,000			
Bangor & Aroostook.....	77	.....	22,843	22,843	1,000,000	1,000,000	1,000,000	1,000,000			
Bessemer & Lake Erie.....	628 ¹	2,180,487	534,870	2,715,357	1,000,000	1,000,000	1,000,000	1,000,000			
Buffalo & Susquehanna R. R.....	204 ¹	6,002,469	285,000	6,287,469	1,000,000	1,000,000	1,000,000	1,000,000			
Buffalo & Susquehanna R. R. & P. R.....	265	1,324,728	88,810	1,413,538	1,000,000	1,000,000	1,000,000	1,000,000			
Buffalo, Rochester & Pittsburgh.....	91	396,299	89,590	485,889	1,000,000	1,000,000	1,000,000	1,000,000			
Canadian Pacific Lines in Maine.....	572 ¹	6,662,824	882,275	7,545,099	1,000,000	1,000,000	1,000,000	1,000,000			
Carolina, Clinchfield & Ohio.....	233	808,866	309,751	1,118,617	1,000,000	1,000,000	1,000,000	1,000,000			
Central of New Jersey.....	238 ¹	1,620,296	123,503	1,743,799	1,000,000	1,000,000	1,000,000	1,000,000			
Central of New England.....	18	16,027,409	4,519,565	20,546,974	1,000,000	1,000,000	1,000,000	1,000,000			
Charleston & Western Carolina.....	67 ¹	2,491,764	280,017	2,771,781	1,000,000	1,000,000	1,000,000	1,000,000			
Chicago & Alton.....	341	1,276,383	304,200	1,580,583	1,000,000	1,000,000	1,000,000	1,000,000			
Chicago & Eastern Illinois.....	1,026 ¹	7,980,503	3,435,891	11,416,394	1,000,000	1,000,000	1,000,000	1,000,000			
Chicago & Northwestern.....	1,275	9,554,649	2,445,621	11,999,270	1,000,000	1,000,000	1,000,000	1,000,000			
Chicago, Burlington & Quincy.....	7,951 ¹	38,560,452	16,364,467	54,924,919	1,000,000	1,000,000	1,000,000	1,000,000			
Chicago Great Western.....	9,074 ¹	49,013,538	17,613,531	66,627,069	1,000,000	1,000,000	1,000,000	1,000,000			
Chicago, Rock Island & Gulf.....	1,496 ¹	7,447,133	2,402,992	9,850,125	1,000,000	1,000,000	1,000,000	1,000,000			
Chicago, Rock Island & Pacific.....	275 ¹	1,070,262	285,149	1,355,411	1,000,000	1,000,000	1,000,000	1,000,000			
Chicago, St. Paul, Minneapolis & Omaha.....	470 ¹	1,740,070	1,429,953	3,169,023	1,000,000	1,000,000	1,000,000	1,000,000			
Cincinnati, Hamilton & Dayton.....	7,565 ¹	32,932,083	15,027,065	47,959,148	1,000,000	1,000,000	1,000,000	1,000,000			
Colorado Midland.....	1,015	5,985,677	1,355,827	7,341,504	1,000,000	1,000,000	1,000,000	1,000,000			
Colorado Southern.....	338	1,195,382	219,080	1,414,462	1,000,000	1,000,000	1,000,000	1,000,000			
Delaware & Hudson Co.—R. R. Dept.....	162	1,815,924	549,705	2,365,629	1,000,000	1,000,000	1,000,000	1,000,000			
Delaware, Lackawanna & Western.....	854 ¹	14,471,617	2,512,231	16,983,848	1,000,000	1,000,000	1,000,000	1,000,000			
Detroit & Mackinac.....	950 ¹	21,631,544	6,274,280	27,905,824	1,000,000	1,000,000	1,000,000	1,000,000			
Detroit, Grand Haven & Milwaukee.....	358 ¹	687,296	280,528	967,824	1,000,000	1,000,000	1,000,000	1,000,000			
Duluth & Iron Range.....	191	1,112,406	517,728	1,630,134	1,000,000	1,000,000	1,000,000	1,000,000			
El Paso & Southwestern Co.....	200 ¹	4,613,212	2,160,663	6,773,875	1,000,000	1,000,000	1,000,000	1,000,000			
Elgin, Joliet & Eastern.....	902	5,134,579	801,186	5,935,765	1,000,000	1,000,000	1,000,000	1,000,000			
Fort Worth & Denver City.....	841 ¹	7,991,427	1,215,274	9,206,701	1,000,000	1,000,000	1,000,000	1,000,000			
Grand Rapids & Indiana.....	454	2,702,937	1,215,274	3,918,211	1,000,000	1,000,000	1,000,000	1,000,000			
Grand Trunk Western.....	586 ¹	3,276,301	1,445,055	4,721,356	1,000,000	1,000,000	1,000,000	1,000,000			
Gulf & Ship Island.....	347	3,464,564	1,761,606	5,226,170	1,000,000	1,000,000	1,000,000	1,000,000			
Gulf, Colorado & Santa Fe.....	308 ¹	1,900,554	339,945	2,240,499	1,000,000	1,000,000	1,000,000	1,000,000			
Illinois Central.....	1,597 ¹	7,301,804	2,420,637	9,722,441	1,000,000	1,000,000	1,000,000	1,000,000			
Kansas City Southern.....	4,755 ²	31,153,478	11,125,859	42,279,337	1,000,000	1,000,000	1,000,000	1,000,000			
Long Island.....	827	5,561,740	1,325,636	6,887,376	1,000,000	1,000,000	1,000,000	1,000,000			
Louisiana & Arkansas.....	399 ¹	2,736,606	5,609,330	8,345,936	1,000,000	1,000,000	1,000,000	1,000,000			
Louisville, Henderson & St. Louis.....	285	992,802	174,174	1,166,976	1,000,000	1,000,000	1,000,000	1,000,000			
Maine Central.....	200	670,167	337,143	1,007,310	1,000,000	1,000,000	1,000,000	1,000,000			
Midland Valley.....	1,024 ¹	5,602,378	2,751,286	8,353,664	1,000,000	1,000,000	1,000,000	1,000,000			
Minneapolis & St. Louis.....	373 ¹	786,032	372,304	1,158,336	1,000,000	1,000,000	1,000,000	1,000,000			
Monongahela.....	1,586	4,763,076	1,432,976	6,196,052	1,000,000	1,000,000	1,000,000	1,000,000			
Nevada Northern.....	65	1,060,976	23,294	1,084,270	1,000,000	1,000,000	1,000,000	1,000,000			
New York Central & Hudson River.....	165	1,079,613	111,476	1,191,089	1,000,000	1,000,000	1,000,000	1,000,000			
New York, Chicago & St. Louis.....	3,592 ¹	51,206,590	26,389,254	77,595,844	1,000,000	1,000,000	1,000,000	1,000,000			
New York, New Haven & Hartford.....	562	7,063,336	1,274,160	8,337,496	1,000,000	1,000,000	1,000,000	1,000,000			
New York, Philadelphia & Norfolk.....	2,091 ¹	26,536,272	22,219,346	48,755,618	1,000,000	1,000,000	1,000,000	1,000,000			
Operated in previous period— ¹ 7,039; ² 34; ³ 1,180; ⁴ 3,591; ⁵ 2,040.	112	2,159,414	375,972	2,535,386	1,000,000	1,000,000	1,000,000	1,000,000			

Operating in previous period—¹ 7,039; ² 34; ³ 1,180; ⁴ 3,591; ⁵ 2,040. —Indicates Deficits, Losses and Decreases.

Commissioner Clark will conduct the first hearing of the Interstate Commerce Commission on rates, regulations and practices of railways in Alaska at Skagway on July 18, when testimony will be heard in the case of the Humboldt Steamship Company versus the White Pass & Yukon.

The commission has suspended the advanced rates on flaxseed from Minneapolis, Minn., and other points to Chicago and other destinations from June 1 to September 28. The rates were advanced from 7½ cents per 100 lbs. from Minneapolis to Chicago to 10 cents per 100 lbs.

Special Examiner Lyons conducted a series of hearings at Kansas City on May 24 and 25, Minneapolis on May 27-28, and Chicago on May 29 and 31, for the purpose of obtaining testimony of shippers who are protesting against changes in Western Classification No. 51 which has been suspended by the commission.

Commissioner Clark held a hearing at Chicago on May 25 on the complaint of Morris & Company, Chicago, against an advance in the switching rates as applied to carload shipments of ice in the Chicago district from \$4 to \$6 a car. The railway contended that this was a temporary arrangement made in connection with the establishment of the new reciprocal switching tariff and that it was expected the matter would be satisfactorily adjusted.

The commission has issued an order which permits telegraph and cable companies to destroy after one year all original telegraph and cable messages transmitted at public tariff rates, but this permission does not apply to messages sent at reduced rates or to messages sent free. The companies are required to file with the commission a copy of the resolution of its board of directors designating an executive officer to have general supervision of the destruction of accounts, records and memoranda.

Commissioner E. E. Clark held a hearing in Chicago on May 27 and 28 in an investigation by the commission into the complaints of coal operators against the rules of the Illinois Central for establishing mine ratings as a basis for car distribution. J. M. Daly, general superintendent of transportation of the Illinois Central, who was the principal witness for the railway, gave a history of the various rules which have been tried since 1907 and declared that the present rules, which have been suspended, provide the most equitable plan thus far suggested. The rules provide that mine ratings shall be based on the tonnage shipped by each mine from January 1 to September 30, the period of full car supply, plus 50 per cent. in the case of local mines and 60 per cent. in the case of junction mines to provide for the expansion of business during the winter months. After having tried several plans based on the physical capacity, a set of rules, known as the "operators' rules," also based on capacity, was adopted at a meeting in St. Louis in January, 1911, at which all of the operators were represented and had a voice in the making of the rules. In the fall, during the period of the strike of the mechanical forces on the Illinois Central, there were many complaints regarding the operation of the rules. Another meeting was held on December 2, at which it was decided that the rules would be annulled and the obligation of establishing rules was again imposed on the railway. On February 9 the rules now objected to were put in effect but were suspended by the Illinois railway commission and the old rules were restored until April 1, the close of the mining season. The operators appeared to favor a system of mine ratings based on physical capacity instead of on actual shipments.

Complaint Dismissed.

Southern Illinois Millers' Association v. Louisville & Nashville et al. Opinion by Chairman Prouty:

The commission found that the rates on flour and other grain products from mills in southern Illinois to the Atlantic seaboard were not unreasonable, although they were greater than the rates from St. Louis to the Atlantic seaboard, which is a greater distance. The commission also found that these rates did not violate the fourth section, which prohibits the rate from an intermediate point from being greater than that from the more distant point, because they were proportional rates; nor were the rates unduly discriminatory against the mills of southern Illinois in favor of the mills at St. Louis. The commission recommended that the defendants should permit milling-in-transit on all lines by which

this traffic can move from St. Louis to eastern destinations at a stop-over charge not exceeding ½c. per 100 lbs. No formal order was made, as the matter of milling-in-transit was not included in the complaint, although the facts were brought out in the testimony and were discussed in the argument. The complaint was dismissed. (23 I. C. C., 672.)

Rate on Lumber from Kansas City to Des Moines Reduced.

Wheeler Lumber, Bridge & Supply Co. v. St. Louis, Iron Mountain & Southern et al. Opinion by the commission:

The rate on lumber from Kansas City to Des Moines should not be higher than from St. Louis to Des Moines, and is therefore reduced from 11½ cents per 100 lbs. to 9½ cents. (23 I. C. C., 514.)

Not a Mixed Carload Shipment.

Reno Wholesale Liquor Store, Inc., v. Southern Pacific. Opinion by the commission:

There is a rate on mixed carload shipments of wine and brandy, but there is a rule in western classification providing that carload ratings will apply only on shipments received under one bill of lading. The complainant claims that the Southern Pacific's agent suggested that two bills of lading be issued for each carload shipment of mixed carloads of wine and brandy. Relying solely on this suggestion, shipment was made under separate bills of lading, thus depriving the shipments of the carload rate on mixed shipments. (23 I. C. C., 516.)

Wool Rate Reduced.

Traugott Schmidt & Sons v. Michigan Central et al. Opinion by Chairman Prouty:

Complaint alleges that rates on wool from Detroit to Boston, New York, and Philadelphia, and other eastern destinations are unreasonable *per se* and unduly discriminatory as compared with Chicago and St. Louis. The allegation of unreasonableness can not be sustained, but present rates do unduly discriminate against Detroit, whose rates on wool should not for the future exceed 78 per cent. of that contemporaneously in effect from Chicago. (23 I. C. C., 684.)

Rates on Light-End Distillate Reduced.

National Refining Co. v. Missouri, Kansas & Texas et al. Opinion by the commission:

The complaint is made against a charge for light-end distillate at the same rate that is made for refined oil. This distillate is one of the two commodities resulting from a skimming process through which crude oil is put. The crude oil is distilled just far enough to separate the light from the heavier oil, the light part forming about one-quarter of the total oil. It was this light part that was shipped, and testimony tended to show that it had no commercial value except for refining purposes. It sold, however, for more than the crude oil from which it was abstracted. From this light oil gasoline, naphtha and other products are made, and since a rate of 36 cents is charged on the light-end distillate, which was classified as refined oil, and a few months later a commodity rate of 17 cents was made on gasoline, naphtha and other products, it is evident that entirely too high a rate was charged on the light-end distillate. Reparation is awarded. (23 I. C. C., 527.)

Private Cars Not Charged Demurrage.

Central Commercial Co. v. Gulf & Ship Island et al. Opinion by the commission:

The complainant ordered its private tank car sent from a point in Mississippi, on the Illinois Central, to Kola, on the Gulf & Ship Island. The Gulf & Ship Island moved the car from Jackson, Miss., its connection with the Illinois Central, to Kola and there placed it on a siding of the Kola Lumber Company. The Kola Lumber Company took it up into the woods and placed it on a siding owned by the Leaf River Turpentine Company. The complainant owns half of the stock of the Leaf River Turpentine Company. The car remained there from some time in December to some time in March, and was then loaded and forwarded to the Gulf & Ship Island, and the Gulf & Ship Island charged \$1 a day for demurrage during the time the car was held on the private siding of the Leaf River Turpentine Com-

pany. The commission holds that the placing by the Gulf & Ship Island of the car on the siding of the Kola Lumber Company was not for loading, and that it was removed to a private siding by the owner within the 48 hours free time, therefore, no demurrage should be charged. (23 I. C. C., 532.)

Mileage Rates Approved on Packing House Products.

In re suspension of advances in rates on packing house products from Wichita, Kan., to points in Louisiana. Opinion by Chairman Prouty:

In 22 I. C. C., 160 the commission approved a mileage scale of rates on packing house products from Wichita to various points of consumption in Arkansas and that part of Louisiana west of the Mississippi. The railways filed schedules in accordance with these suggestions, but packers at Wichita complained because they involved substantial advances from Wichita with no corresponding advances from Kansas City and St. Louis. The commission has no authority to compel the advance in rates for the purpose of removing discriminations. It cannot, therefore readjust the rates on the basis suggested without the co-operation of the carriers. All the principal railways were represented at the hearing and were unanimous that some scheme for equalizing rates on packing house products and raising certain rates that were too low should be adopted, and on the filing of the tariffs in accordance with the suggestions of the commission the suspension of the advanced rates will be removed. (23 I. C. C., 652.)

Western Live Stock Rates Reduced.

Corporation Commission of Oklahoma v. Atchison, Topeka & Santa Fe et al. Opinion by Chairman Prouty.

Upon applications by the Cattle Raisers' Association of Texas and by Oklahoma City, Fort Worth and Wichita, for modifications of the conclusions of 22 I. C. C., 160, the following conclusions were reached: The commission declined to modify the mileage scale for the movement of live stock originally prescribed. In regard to the allowance of 2½ cents for additional line hauls, the commission decided that this allowance should hold so far as short distances were concerned, but that they should not apply to distances greater than 500 miles. The former rate of 38 cents to Oklahoma City from El Paso should be continued as a proportional rate applicable to the movement of live stock which has already come into El Paso by rail, and that the mileage scale should be confined exclusively to the local movement from El Paso. In a great majority of instances, carriers should establish through routes and joint rates via all reasonable available direct lines. In any case they fail to establish such route and rate, any complaining party may call the attention of the commission to that particular instance by filing a petition which will thereupon be served upon the defendants and the case disposed of after investigation. Rates on stock cattle ought not to exceed 75 per cent. of the rates prescribed for the movement of beef cattle. Rates into Oklahoma City and from that point to Kansas City are in most instances higher than the rates to Kansas City, and that ought to be so since it seldom happens that the direct line from the point of origin to Kansas City is through the Oklahoma market. Fort Worth pays the Texas commission scale while Oklahoma City must pay the interstate rate established by the mileage scale. Since the interstate rates exceed those of the Texas commission, it is undoubtedly true that packing houses at Oklahoma City suffer a disadvantage to some extent in this particular. While it would be desirable if the same scale of live stock rates applied both to Fort Worth and Oklahoma City from points in Texas, still the discrimination resulting from the difference between the Texas scale and the interstate rates cannot be pronounced undue, and any change would result in other discriminations. The "Southeastern territory," to which Fort Worth was given an advantage of 3 cents per hundred pounds on fresh meats and packing house products, was clearly defined. The rate from Wichita to the "Southeastern territory" should not be advanced unless that from Kansas City was also increased by a corresponding amount, which cannot apparently be done. While still of the opinion that rates from both Kansas City and Wichita to Memphis and the surrounding territory ought to exceed that from Oklahoma City by 2½ cents per hundred pounds, the commission did not require carriers from Wichita to increase the differential to that amount, but leaves in effect the present adjustment. The question of rates on green salted hides,

fertilizer and fertilizing material to certain points from Oklahoma City was postponed until further investigation. For the future, rates of 17 cents on packing house products and 26 cents on fresh meats from Oklahoma City to Kansas City were prescribed, and 21 cents on packing house products and 32½ cents on fresh meats from Fort Worth to Kansas City. Southern carriers may very properly meet from both Oklahoma City and Fort Worth via Memphis and Vicksburg the rates established via St. Louis to New York and other eastern territory. The commission has recently granted its dispensation under the fourth section, permitting them to meet these rates and to maintain at the same time higher rates to intermediate territory; but the commission could not recognize the force of the contention that the rate itself should be established through these gateways. The commission dismissed all the petitions of Wichita for modifications of its previous report, except the one relating to less than carload rates. The commission found that carriers should publish tariffs according less than carload rates or pedler-car service; that the rate upon packing house products should be 130 per cent. and upon fresh meats 150 per cent. of the carload rate; and that a minimum may be required equivalent to the earnings on 10,000 lbs. of fresh meat to the most distant point. Refrigeration should be provided or paid for by the shipper in addition to the above rates. No general order can be made covering this situation, which must be dealt with in piecemeal. In those respects in which the supplemental report modifies, adds to or interprets the original report, the commission will rely upon the carriers to observe the suggestions made. An order will be issued requiring carriers to maintain the rates found reasonable from Oklahoma City and Fort Worth to Kansas City. (23 I. C. C., 656.)

STATE COMMISSIONS.

W. L. Derr, inspector for the New York Commission, Second district, has resigned. See Elections and Appointments.

E. H. Hogueland, secretary of the Kansas Public Utilities Commission, has been appointed rate clerk to the commission, effective June 15. The secretary of the commission has a salary of \$1,800 and the rate clerk \$4,000 a year. Mr. Hogueland succeeds E. E. Smythe, resigned. Mr. Hogueland was at one time traveling freight agent of the Atchison, Topeka & Santa Fe and was later assistant to the attorney of the old State Board of Railway Commissioners of Kansas.

The Public Service Commission of Maryland has ordered the railways with terminals at Baltimore to put into effect at Baltimore a flat charge for switching as follows: Yard switching (from one track to another in the same yard), \$1. Connecting line switching (two-road switching), when for line movement, \$3; when for local movement, \$6. Intermediate switching (three-road switching), when for line movement, \$4; when for local movement, \$7.50. Industrial switching (between industries on the same road), \$5. The commission also defines the Baltimore switching limits.

The New York Public Service Commission has been asked by the Delaware, Lackawanna & Western and other railways for a rehearing on the order made by the commission reducing rates on milk and cream. A rehearing is asked on the ground that the commission improperly placed the burden of proof as to the reasonableness of the increased rates put in effect by the railways on the railway companies, whereas the increased rates should have been presumed reasonable and the burden of proof that they were unreasonable placed on the complainants. A rehearing is also asked on the ground that since the order was made the railways have been obliged to increase wages, which increased expense should be met through an increase in revenue.

COURT NEWS.

The petition of the Atlantic Coast Line, appealing from an order of the Interstate Commerce Commission which prescribed certain rail and water rates on boots and shoes from Boston and New York to Atlanta, was dismissed on motion of the railway by the Commerce Court on June 4. The commission reduced the rates.

Railway Officers.

ELECTIONS AND APPOINTMENTS.

Executive, Financial and Legal Officers.

W. W. Cameron has been appointed vice-president of the Texas Central, with office at Waco, Tex.

L. P. Ecker, auditor of the Hocking Valley, at Columbus, Ohio, has been appointed auditor of the Kanawha & Michigan, with office at Charleston, W. Va.

R. L. Porter, auditor of the Wheeling & Lake Erie, at Cleveland, Ohio, has been appointed auditor of the Chicago & Western Indiana, with office at Chicago, succeeding M. J. Murphy, resigned.

Thomas B. Pryor has been appointed general attorney of the St. Louis, Iron Mountain & Southern, with office at Fort Smith, Ark., succeeding Lovick P. Miles, resigned to engage in the private practice of law at Memphis, Tenn.

L. K. Luff, auditor of disbursements of the Rock Island Lines, with office at Chicago, has been appointed auditor of traffic of the Delaware & Hudson, with office at Albany, N. Y., succeeding to the duties of J. B. Brownell, assistant general auditor.

F. J. Brunner has been appointed auditor for the receiver of the Wabash-Pittsburg Terminal and the West Side Belt, succeeding F. B. Brown, resigned to go to another company, and W. S. Reed has been appointed freight claim clerk, both with offices at Pittsburgh, Pa.

Joseph M. Bryson, general solicitor of the Missouri, Kansas & Texas at St. Louis, Mo., has been appointed general counsel, with office at St. Louis, succeeding James Hagerman, resigned, and the office of general solicitor has been abolished. As has been announced in these columns, Mr. Hagerman has been made consulting counsel.

Frank Barr, vice-president of the Boston & Maine, has been retired under the pension rules of the company, and the jurisdiction of H. J. Horn, vice-president of the New York, New Haven & Hartford, has been extended over the operating department of the Boston & Maine, succeeding Mr. Barr. Mr. Barr began railway work on March 1, 1869, as freight clerk and telegraph operator on the Worcester & Nashua now a part of the Boston & Maine. From June, 1873, to November, 1892, he was general agent of the same road, and in November, 1892, was appointed superintendent of the Worcester, Nashua & Portland division of the Boston & Maine, at Nashua, N. H. He was promoted to assistant general manager in December, 1896, remaining in that position until July, 1903, when he was elected third vice-president and general manager of the same road, and at the time of his retirement he was vice-president in charge of the operating department.

John W. Nokely, assistant secretary and assistant treasurer of the Chesapeake & Ohio, at New York, has been appointed general auditor of the Chesapeake & Ohio and the Chesapeake & Ohio of Indiana, with office at Richmond, Va. F. D. Hodgson, auditor of miscellaneous accounts, at Richmond, has been appointed auditor of the Hocking Valley, with office at Columbus, Ohio, succeeding L. P. Ecker, resigned to go to the Kanawha & Michigan.

LeRoy Kramer, assistant to the second vice-president of the Rock Island Lines at Chicago, having resigned to become assistant to the president of the Pullman Company; N. D. Ballantine, superintendent of car service of the Rock Island Lines at Chicago, has been appointed assistant to second vice-president, giving special attention to transportation matters; and H. G. Clark, trainmaster at El Reno, Okla., and formerly district engineer of the Third district of the system at El Reno, has been appointed assistant to second vice-president, giving special attention to all matters pertaining to maintenance of way and structures; both with office at Chicago.

Noten D. Ballantine, who has been promoted from superintendent of car service of the Rock Island Lines to assistant to second vice-president, giving special attention to transportation matters,



N. D. Ballantine.

with office at Chicago, was born March 12, 1872, at Booneville, Mo. He began railway work in 1886 as messenger in the telegraph department of the Kansas City, Fort Scott & Memphis, now part of the Frisco system, and except for the year 1892, he was with that road until 1896, having been consecutively clerk, operator, stenographer and electrician. During 1892 he was ticket agent of the Manitou & Pikes Peak Railway, and from 1896 to October, 1898, he was auditor of the Manitou & Pikes Peak. On the latter date he went with the Kansas City, Pittsburg & Gulf, as secretary to the general manager; from July, 1899, to September, 1903, he was superintendent of telegraph; and from September, 1903, until January 1, 1906, he was superintendent of transportation of the Kansas City Southern, successor to the K. C. P. & G. On the latter date he went to the Chicago, Rock Island & Pacific as superintendent of car service, from which position he has just been promoted.

Operating Officers.

C. O. Johnson has been appointed superintendent of dining car service of the Missouri, Kansas & Texas.

W. I. Stine has been appointed superintendent of car service of the Missouri Pacific-Iron Mountain system, with office at St. Louis, Mo.

Fred M. Jones has been appointed assistant superintendent of the St. Louis division of the Illinois Central, with office at Carbondale, Ill.

W. Carswell, assistant superintendent of the Great Northern at Whitefish, Mont., has been appointed trainmaster, with office at Havre, Mont.

J. A. Glasford, assistant yardmaster of the Canadian Pacific at Toronto, Ont., has been appointed superintendent of the terminal at Winnipeg, Man.

F. A. Morgan has been appointed superintendent of the new St. Louis division of the Illinois Traction System, with headquarters at St. Louis, Mo.

N. J. Abram has been appointed assistant superintendent of transportation of the Chicago, Burlington & Quincy, with office at Chicago; a new position.

J. R. Pickering has been appointed acting superintendent of car service of the Rock Island Lines, with office at Chicago, succeeding N. D. Ballantine, promoted.

S. E. Burkhead, trainmaster of the Texas & Pacific, at Marshall, Tex., has been appointed superintendent of terminals, with office at Fort Worth, Tex., succeeding R. E. Boswell, deceased.



Frank Barr.

E. H. Barnes, chief engineer of the Grand Rapids & Indiana at Grand Rapids, Mich., has been appointed also assistant to the general manager, with office at Grand Rapids, succeeding W. B. Stimson, deceased.

W. C. Hurst, formerly superintendent of the Cincinnati, Hamilton & Dayton, at Dayton, Ohio, has been appointed general superintendent of the Chicago, Peoria & St. Louis, with office at Springfield, Ill., succeeding C. R. Wescott, resigned to engage in other business.

William L. Derr, who has been steam railway inspector for the New York Public Service Commission, Second district, since June, 1909, has been appointed superintendent of the Western division of the Chicago Great Western, with office at Clarion, Iowa, succeeding F. R. Blunt, resigned.

F. J. DeGrief, chief despatcher of the Lake Erie & Western at Lafayette, Ind., has been appointed trainmaster of the Peoria division of that road, with office at Lafayette; this position, which was abolished about three years ago, was created again early in May. Edward Harty succeeds Mr. DeGrief.

P. F. Weisbrod, trainmaster on the Alberta division of the Canadian Pacific at Macleod, Alberta, has been appointed superintendent of the Saskatchewan division, with office at Moose Jaw, Sask., and W. S. Hall succeeds Mr. Weisbrod. R. Sinclair, master of bridges and buildings at Cranbrook, B. C., has been appointed trainmaster at Field, B. C., succeeding A. W. G. Clark, assigned to other duties.

John B. Hammill, passenger trainmaster of the Boston & Albany, at Boston, Mass., has been appointed superintendent of the Boston division, with office at Boston, succeeding Philip Morrison, deceased, and his former position has been abolished. Franklin A. O'Brien, who has been chief clerk to Mr. Hammill, has been promoted to the new position of crew despatcher, with headquarters at South Station, Boston, and he will be in charge of the assignment of crews and the distribution of passenger train equipment between Boston and Albany.

E. L. Desjardins has been appointed assistant superintendent of the Montreal and Ste. Flavie district of the Intercolonial Railway, with headquarters at Riviere du Loup, Que.; L. S. Brown has been appointed assistant superintendent of the Moncton and Ste. Flavie district, with headquarters at New-castle, N. B.; R. Colclough has been appointed assistant superintendent of the Halifax and St. John district, with headquarters at Moncton, N. B., and W. A. Fitch has been appointed assistant superintendent of the Sydney and Oxford district, with headquarters at Sydney, N. S.

Albert Earl Clift, who has been appointed general superintendent of the Northern and Western lines of the Illinois Central, with office at Chicago, as has been announced in these columns, was born October 15, 1868, at Urbana, Ill. In December, 1888, he began railway work as a brakeman on the Illinois Central, and he has been with that road ever since, except for the period from April 14, 1892, to February 19, 1893, part of which time he was a conductor on the Cleveland, Cincinnati, Chicago & St. Louis. On the Illinois Central he was consecutively conductor, engine foreman of the Champaign district, yardmaster of the Champaign yards, conductor on the Chicago district, passenger conductor on the Chicago division, acting trainmaster of the Chicago district, and in February, 1903, he was made trainmaster of the Chicago district, with office at Kankakee, Ill. He was promoted to superintendent of the Freeport division two years later and was transferred as superintendent of the St. Louis division to Carbondale, Ill., in January, 1907. On June 1, 1910, he was made general superintendent of the Southern Lines, with office at New Orleans, La., which position he was holding at the time of his recent appointment as general superintendent of the Northern and Western Lines.

Traffic Officers.

C. M. Bridge, commercial agent of the Illinois Traction System at St. Louis, Mo., has been appointed general agent, with office at St. Louis, and George V. Cardner succeeds Mr. Bridge.

J. A. Dickinson, traveling freight agent of the Southern Railway, at St. Louis, Mo., has been appointed commercial agent,

with office at Los Angeles, Cal., and C. P. Hoy succeeds Mr. Dickinson, with office at St. Louis.

Arthur Fonda, chief clerk in the general freight department of the Gulf, Colorado & Santa Fe at Galveston, Tex., has been appointed general freight agent of the Texas City Terminal Company, with headquarters at Texas City, Tex.

W. Phillips, general freight agent of the Canadian Northern lines east of Port Arthur, Ont., and west of Ottawa, with office at Toronto, has been appointed European traffic manager, with office at London, England. He will also represent the Canadian Northern steamships. H. J. Cowie, European freight agent at London, England, has resigned.

Mark Plotnick has been appointed immigration and colonization agent of the joint immigration bureau of the St. Louis, Iron Mountain & Southern, the Texas & Pacific and the International & Great Northern, with office at St. Louis, Mo. D. C. Smith has been appointed joint general livestock agent of the International & Great Northern, with office at North Fort Worth, Tex.

R. H. Carmichael, general agent of the Galveston, Harrisburg & San Antonio, the Texas & New Orleans, the Houston & Texas Central, the Houston East & West Texas and the Houston & Shreveport, at Galveston, Tex., has been appointed general agent, with office at Houston, Tex., succeeding M. F. Smith, resigned to become general manager of the Aransas Pass Dock & Channel Company. W. R. Smith, division freight and passenger agent at Austin, Tex., succeeds Mr. Carmichael.

Engineering and Rolling Stock Officers.

J. R. Stephens, assistant chief engineer of the Missouri Pacific-Iron Mountain system at St. Louis, Mo., has been appointed chief engineer, with office at St. Louis, succeeding E. F. Mitchell, resigned.

E. T. Amback, signal engineer of the Cincinnati, Hamilton & Dayton, at Cincinnati, Ohio, has been appointed assistant signal engineer of that road and the Baltimore & Ohio Southwestern, with office at Cincinnati.

E. H. Raquet, chief chemist of the New York, New Haven & Hartford, at New Haven, Conn., has been appointed engineer of tests of the New York, New Haven & Hartford, the Boston & Maine, and the Central New England, with office at Boston, Mass.

J. Robertson, resident engineer of the Alberta division of the Canadian Pacific at Cranbrook, B. C., has been appointed resident engineer, with headquarters at Calgary, Alberta, succeeding T. J. Brown, who has been transferred to Cranbrook in place of Mr. Robertson.

G. Seaman, general roadmaster of the Halifax & Southwestern, at Bridgewater, N. S., has been appointed bridge and building master of the Canadian Northern Quebec, and the Quebec & Lake St. John, with office at Joliette, Que., succeeding L. P. McGee, assigned to other duties.

J. C. Morrison, road foreman of the Chicago, Burlington & Quincy at Lincoln, Neb., has been appointed master mechanic of the Omaha division, with office at Omaha, Neb., succeeding A. N. Willsie, who has been appointed chairman of the company's fuel committee at Chicago.

M. C. M. Hatch, engineer of tests of the New York, New Haven & Hartford, the Boston & Maine, and the Central New England, has been appointed superintendent of fuel service of the Delaware, Lackawanna & Western, with jurisdiction over all matters pertaining to fuel and fuel economies, with office at Scranton, Pa.

W. G. Rose, master mechanic of the Cincinnati, Hamilton & Dayton at Cincinnati, Ohio, has been appointed master mechanic of the Moorefield shops, near Indianapolis, Ind., succeeding W. C. Steers, resigned. Charles A. Gill, master mechanic of the Baltimore & Ohio Southwestern at Washington, Ind., has been transferred to Cincinnati, succeeding Mr. Rose, and J. J. Carey succeeds Mr. Gill.

J. A. Heaman, whose appointment as division engineer of the Grand Trunk Pacific, with office at Fitzhugh, Alta., was announced in the *Railway Age Gazette* of April 26, page 978, was born June 3, 1874, at Memphis, Tenn. He attended the public

schools and finished his education at Collegiate Institute, London, Ont., and at McGill University, Montreal, and in April, 1901, began railway work with the Grand Trunk as an instrument man on double track construction. He was with that road until May, 1905, having been made resident engineer on construction in April, 1902, resident engineer of maintenance in November, 1902, and assistant engineer of the Grand Trunk Pacific, in charge of location east of Winnipeg, in November, 1903. From May, 1905, until October, 1908, he was with the National Transcontinental Railway, first as assistant engineer in charge of location and construction, and later as assistant district engineer. He returned to the Grand Trunk Pacific in October, 1908, as assistant district engineer, was promoted to district engineer in June, 1910, and in April, 1911, was made office engineer, which position he held at the time of his promotion to division engineer at Fitzhugh.

OBITUARY.

Morris L. Sternberger, president of the Dayton, Lebanon & Cincinnati Railroad & Terminal Company, died at his home in Jackson, Ohio, on June 2, at the age of 51.

Charles F. Warren, general agent of the Atchison, Topeka & Santa Fe, with office at Salt Lake City, Utah, died at that place on May 23. He was 54 years old and had been with the Santa Fe at Salt Lake City since 1894.

Amos H. Merchant, who for 13 years was assistant general freight agent of the Freemont, Elkhorn & Missouri Valley, now a part of the Chicago & Northwestern, died on June 3 at Brockton, Mass. Mr. Merchant was born November 25, 1842, at Worcester, Mass., and began railway work in 1870.

Philip Morrison, division superintendent of the Boston & Albany, with office at Boston, Mass., died on May 30, at his home at Watertown, after an illness of several weeks. Mr. Morrison was one of the oldest officers in point of service on the Boston & Albany. He was born at Waltham, Mass., on December 11, 1855, and began railway work as a brakeman on June 27, 1872. He served as freight conductor, passenger conductor, assistant station master at Boston, and station master at that city. He was made a trainmaster in July, 1899, and was appointed assistant superintendent on February 1, 1904. Shortly afterward he was promoted to superintendent of the Boston division, which included the main line and all branches between Boston and Springfield.

David Holtz, formerly for over 30 years master of machinery of the Western Maryland, died on May 30, at Baltimore, Md. Mr. Holtz was born on November 15, 1842, at Baltimore, and began railway work in 1856. He was consecutively messenger boy, clerk, apprentice in machine shops and draftsman on the Baltimore & Ohio, and then for 15 months he was assistant engineer in the United States Navy. The following eight years he was chief draftsman of the Baltimore & Ohio, and for one year from September, 1873, was superintendent of rolling stock of the New York, Lake Erie & Western. In 1874 he returned to the Baltimore & Ohio as draftsman, and in November, 1876, was appointed master of machinery on the Western Maryland, from which position he resigned in June, 1907.

Fred Willis Stanyan, general manager of the Montpelier & Wells River, and the Barre Railroad, with office at Montpelier, Vt., died at his home at that place on May 23. Mr. Stanyan was born on September 13, 1859, at Wentworth, N. H., and graduated from Concord High School. He began railway work as a telegraph operator at Lakeport, N. H., and two years later went to Plymouth, N. H., in the train despatcher's office. A year later he was appointed clerk in the office of the superintendent of the Boston, Concord & Montreal, where he remained about two years. From 1881 to 1884 he was division freight agent of the Boston & Lowell. He then went to Fabyan, N. H., as general agent, which position he held about three years, and in 1888 he went to Barre, Vt., as acting superintendent and general freight and passenger agent. In 1891 he was appointed car agent of the Montpelier & Wells River, and in 1898 was appointed superintendent of that road, and about the same time was made general superintendent of the Barre Railroad. Since July 1, 1910, he was general manager of both these companies.

Equipment and Supplies.

LOCOMOTIVE BUILDING.

THE CANADIAN PACIFIC is said to be in the market for 250 locomotives. This item has not been confirmed.

THE ERIE has ordered 5 Pacific type locomotives from the Lima Locomotive & Machine Company. The cylinders will be 27 in. x 28 in.

THE CHICAGO & EASTERN ILLINOIS has ordered 25 simple mikado locomotives from the American Locomotive Company, to be equipped with Schmidt superheaters. The cylinders will be 28 in. x 30 in.; the diameter of the driving wheels will be 63 in., and the total weight of engine and tender will be 471,000 lbs.

THE ST. LOUIS & SAN FRANCISCO has ordered 40 simple consolidation locomotives from the American Locomotive Company, to be equipped with Schmidt superheaters and with speed recorders. The cylinders will be 26 in. x 30 in.; the diameter of the driving wheels will be 63 in., and the total weight of the engine and tender will be 396,000 lbs.

CAR BUILDING.

THE BALTIMORE & OHIO is in the market for from 2,000 to 3,000 center sills for the reinforcement of freight cars.

THE CANADIAN PACIFIC is said to be in the market for a large number of freight cars. This item has not been confirmed.

THE TEXAS MIDLAND has ordered two 70-ft. 100-passenger gasoline-electric motor cars from the General Electric Company.

THE PENNSYLVANIA EQUIPMENT COMPANY, Philadelphia, Pa., is in the market for 20 second-hand 40 ft. flat cars of 80,000 lbs. capacity.

THE ST. LOUIS, BROWNSVILLE & MEXICO has ordered two 70-ft. 100-passenger gasoline-electric motor cars from the General Electric Company.

THE ST. LOUIS SOUTHWESTERN has ordered 10 all-steel 70 ft. baggage cars and 10 all-steel, 70 ft. combination baggage and mail cars from the American Car & Foundry Company.

THE ST. LOUIS & SAN FRANCISCO, as mentioned in the *Railway Age Gazette* of May 10, has ordered 4,600 steel underframe coal cars from the American Car & Foundry Company, of which 2,800 are for the Chicago & Eastern Illinois and 1,800 for the Frisco. These cars will be of 50 tons capacity and will weigh 40,000 lbs. The inside measurements will be 41 ft. long, 9 ft. 2 1/4 in. wide and 4 ft. 4 in. high. The overall measurement will be 43 ft. 8 3/8 in. long, 10 ft. wide and 8 ft. 3 in. high above the rails. Some of the special equipment is as follows:

Brakes—New York Air Brake Co.	Draft gear—Cardwell.
Brake beams—Chicago Ry. Equipment Co.	Journal boxes—McCord.
Brake shoes—Streeter.	Side bearings—Woods.
Brasses—Hewitt.	Springs—Railway Steel-Spring Co.
Couplers—Simplex.	Trucks—Scullin-Gallagher.

This company has also ordered 1,000 steel underframe box cars of 40 tons capacity, weighing 40,000 lbs. The inside measurements will be 40 ft. long, 8 ft. 6 in. wide and 8 ft. high. Some of the special equipment includes:

Brakes—New York Air Brake Co.	Brasses—Hewitt.
Brake beams—Chicago Ry. Equipment Co.	Draft gear—Cardwell.
Brake shoes—Streeter.	Springs—Railway Steel-Spring Co.

IRON AND STEEL.

THE MISSOURI, KANSAS & TEXAS has ordered 18,000 tons of rails from the United States Steel Corporation.

THE ILLINOIS CENTRAL has divided an order for 25,000 tons of rails between the Illinois Steel Company and the Tennessee Coal, Iron & Railroad Company.

THE WESTERN MARYLAND has ordered 2,700 tons of 90 lb. rails from the Bethlehem Steel Company, and 2,100 tons of 90 lb. rails from Carnegie Steel Company.

Supply Trade News.

The Watson-Stillman Company, New York, will soon open a branch office in Philadelphia, Pa.

The Pennsylvania Equipment Company, Philadelphia, is in the market for a 110-ton Vulcan steam shovel.

Benjamin Herman Davis, consulting engineer, particularly for railway bridge design, has moved his offices from the Metropolitan building, New York, to 17 Battery place, New York.

The Eastern Car Company has been organized by interests associated with the Nova Scotia Steel & Coal Company, with a capitalization of \$250,000, to build a car-building plant at New Glasgow, N. S.

Robert M. Smith, for several years in charge of the railway department in the eastern territory of Burton W. Mudge & Company, Chicago, with office in New York, has been made sales manager, with office in Chicago.

The Rothbert Steel & Iron Company has been incorporated in Colorado, with a capital stock of \$5,000,000, to build a steel plant at Denver or Pueblo. The incorporators are D. E. Rowe, H. L. Hamilton and R. H. Tetlow, Jr.

The McKeen Motor Car Company, Omaha, Neb., has recently shipped two 70-ft. motor cars, under their own power to Weatherford, Tex., for the Weatherford, Mineral Wells & Northwestern, for service between Weatherford and Mineral Wells.

Huntley H. Gilbert, who has been connected with George E. Molleson & Company, Chicago, has been appointed sales agent of the Pressed Steel Car Company, Pittsburgh, Pa., and the Western Steel Car & Foundry Company, Chicago, with headquarters at Chicago.

L. F. Philo has been made sales manager of the Buffalo, N. Y., office of the Western Electric Company, Chicago. The organization of that office is now so arranged that all matters arising in connection with relations with the customers may be handled directly by the Buffalo office.

The Strauss design of bascule bridge has recently been adopted by the Great Northern for a 200 ft. single leaf, double track bridge over the Salmon bay waterway at Seattle, Wash.; by the Northern Pacific for a 190 ft. single leaf, single track bridge at the same place; and by the Houston Belt & Terminal railway for a 116 ft. 6 in. single leaf bridge over Buffalo Bayou at Houston, Tex.

On May 27 the Continental & Commercial Trust & Savings Bank of Chicago filed a bill in the United States district court at Milwaukee against the Allis-Chalmers Company, Milwaukee, Wis., asking foreclosure of the \$15,000,000 mortgage on which interest payments due January 1 are unpaid. The bank asked for the appointment of receivers for the property covered by the first mortgages.

The M-C-B Company has been organized under the laws of Illinois to make and deal in railway supplies, with Walter E. Marvel, formerly of the Detroit Seamless Steel Tubes Company, as president. It will have offices at 1334 McCormick building, Chicago. The Russell Car & Snow Plow Company, Ridgway, Pa., has appointed the M-C-B Company its exclusive agent in western territory.

Jacobs & Davies, consulting engineers, New York, have opened an office at 263 St. James street, Montreal, Que., under the management of Paul Seurot, their Canadian representative. This firm has specialized in subaqueous tunnel construction and among other work, built the tunnels under the Hudson river for the extension of the Pennsylvania Railroad into New York City, and also the Hudson & Manhattan tunnels at New York.

Chairman E. H. Gary of the United States Steel Corporation, New York, has announced that it has been decided to continue the contemplated work at the Duluth plant by finishing the blast furnace, open hearth furnaces and wire mills, at a cost of about \$6,000,000, in addition to the \$4,000,000 which has already been invested in the improvements at Duluth. The work is expected to be completed in 1913.

The Western Electric Company, Chicago, the General Electric Company, Schenectady, N. Y., and the Westinghouse Electric

& Manufacturing Company, Pittsburgh, Pa., will in all probability make record earnings this year. The Western Electric Company would have to do \$69,000,000 gross, or only \$3,000,000 better than last year, to exceed the previous high-water mark reached in 1906. The surprising increase in April gross of 17 per cent. is a most hopeful sign for big orders during the 12 months to December 31 next. The General Electric Company will break all previous totals in its 1912 gross. Orders for the first four months of this year have been at the rate of over \$78,000,000 for the full year, which compares with a previous high in 1910 of \$71,182,000. If the entire General Electric organization be included, comprising as it now does the Sprague and Fort Wayne companies and the National Electric Lamp system, a gross for 1912 of \$92,000,000 is in sight. Of course, the proper method of comparison is with the smaller figures. On that basis gross sales are running 12 per cent. in excess of any previous record. The Westinghouse Electric & Manufacturing Company has also had a splendid run of business in March and April. April orders were better than any previous April in three years, with orders billed approaching \$3,520,000, or at the rate of \$42,000,000 gross per annum. This compares with shipments billed out of factories of about \$31,000,000 during the fiscal year to March 31 last and orders received of about \$30,000,000. In other words, if Westinghouse Electric holds the splendid improvement of March and April it will do a gross this year of over \$40,000,000, and in any event has every reason to hope for sales equaling the previous mark of \$38,119,000 established during the 1911 year. In their 1911 year these three big companies shipped a total of about \$167,000,000 of electrical apparatus and supplies. It seems probable that 1912 will witness gross sales delivered to buyers of between \$180,000,000 and \$185,000,000. This is a prospective gain of over 15 per cent.—*Abstracted from an article in the Wall Street Journal.*

LeRoy Kramer, assistant to the second vice-president of the Rock Island Lines at Chicago, has been appointed assistant to the president of the Pullman Company, Chicago, with office in that city.



LeRoy Kramer.

Mr. Kramer was born August 19, 1875, at Wichita, Kan., and received a high school education. He began railway work in 1897 with the St. Louis & San Francisco, and remained with the Frisco Lines until December, 1909. He was clerk and stenographer, and acted in all the different capacities in the superintendent's office, and was then consecutively chief clerk to the general superintendent of transportation, chief clerk to the general manager, chief clerk to the second vice-president, assistant to the second vice-president, and division superintendent first of the

Kansas and later of the Central division. In December, 1909, he left the Frisco Lines to become assistant to the vice-president in charge of purchases of the Rock Island Lines, and from June, 1910, until June 1, 1912, the date of his present appointment, he was in the operating department of the Rock Island Lines, his title having been assistant to the second vice-president.

TRADE PUBLICATIONS.

SECTIONAL STEEL BUILDINGS.—The Ruby Manufacturing Company, Chicago, has issued a new illustrated folder describing its line of sectional, portable fireproof steel buildings for a large variety of uses, including garages, boathouses, contractors' buildings, bunk houses, tool houses, engine houses, handcar houses and power plant buildings. These buildings contain no combustible material of any kind, the frames being built of heavy steel angles on the truss principle, designed for permanent stability and durability.

Railway Construction.

New Incorporations, Surveys, Etc.

ARTESIAN BELT.—The property of this company was acquired on May 26, by the European Contract Syndicate, Limited. This line is to be the connecting link to San Antonio, Tex., of the projected San Antonio, Rockport & Mexican, which will give San Antonio another line to the Gulf coast and into Mexican territory. The San Antonio, Rockport & Mexican is projected from San Antonio via Crowther and Rockport, to Harbor Island, also from Crowther to a point on the Rio Grande, in all 337 miles. The contract for building the line was let in April. It is expected that the section from San Antonio to Crowther will be in operation by August, if the site for a terminal in San Antonio is granted. J. P. Jackson, chief engineer, Macdona, Tex.

BATESVILLE & NORTHEASTERN.—An officer writes that this company will soon have \$120,000 to build a section of this line. The projected route is from Batesville, Ark., northeast to a point on the St. Louis & San Francisco, about 60 miles. V. Y. Cook, president, Batesville. (March 15, p. 524).

BIRMINGHAM & SOUTHEASTERN.—This company, which operates a line from Union Springs, Ala., north to Fort Davis, 7½ miles, is building an extension northwest to Milstead, 20 miles. The company recently secured the rights and property of the Tallassee & Montgomery on condition that they would build 40 miles north to Tallassee during the next four years. W. M. Blount, president, Union Springs. (May 5, p. 1084).

BOSTON & MAINE.—The Concord & Montreal is planning to carry out work on a number of additions and betterments, including a new electric line to the summit of Mount Washington, N. H., about 13 miles. It is expected that the work will be finished in about two years. B. A. Kimball, president. (See an item in General News, May 17, p. 1126, also see Concord & Montreal under Railway Financial News.)

See New York, New Haven & Hartford.

CANADIAN PACIFIC.—Work is to be started at once, it is said, on an extension of the Esquimalt & Nanaimo from McBride Junction, B. C., to Courtenay. A contract has been let for grading the first ten miles, and for the necessary bridge work to Culliton Bros., Spokane, Wash. The line between McBride Junction and Courtenay, 60 miles, has been surveyed for some time.

CAROLINA, CLINCHFIELD & OHIO.—An officer writes that the extension to be built from Dante, Va., north to Elkhorn City, Ky., will cross Sandy Ridge through a mile and a half tunnel, and the route continues down the McClure and Russell forks of the Big Sandy, 35 miles, to a connection with the Chesapeake & Ohio at Elkhorn City. The line adopted has a 1 per cent. grade against southbound traffic, and 10 per cent. maximum curvature. It passes through a very rough country, necessitating the construction of 21 tunnels. Work is to be started at once, and it is expected will be finished in 1913. As previously noted in these columns, the contract to build the extension will be given to the Rinehart & Dennis Company, Charlottesville, Va. Ward Crosby, chief engineer, Johnson City, Tenn.

CHESAPEAKE & OHIO.—An officer writes regarding the report that a line is to be built from Lee Hall, Va., southeast to Yorktown, about 10 miles, that this extension has been under consideration, but nothing definite has yet been done. F. I. Cabell, chief engineer, Richmond, Va.

CHICAGO, MILWAUKEE & PUGET SOUND.—According to press reports, contracts are to be let at once to build 140 miles to the wheat producing district of Montana. The new line is to be built through territory heretofore controlled by the Great Northern, and will cost over \$6,000,000. It is expected to be finished in time to handle the 1913 wheat product of the Judith-Basin country and the valleys north of Lewistown, Mont. E. O. Reeder, chief engineer, Seattle, Wash. (May 17, p. 1139.)

CINCINNATI, NEW ORLEANS & TEXAS PACIFIC.—The construction of 29 miles of double-track between Erlanger, Ky., and Williamstown, has been authorized. When this work is completed, there will be 30 miles of continuous double-track from

Ludlow to Williamstown. C. Dougherty, chief engineer, Cincinnati, Ohio.

CONCORD & MONTREAL.—See Boston & Maine.

ELBERTON & EASTERN.—Financial arrangements are said to have been made to build from Tignall, Ga., in Wilkes county, to Lincolnton. Preliminary surveys are to be made at once. The company was organized last year with \$500,000 capital, and with office at Elberton, to build about 50 miles from Elberton south via Washington, thence east to Lincolnton. W. O. Jones, president.

EL PASO & SOUTHWESTERN.—According to press reports work is to be started by July on a branch from Lewis Springs, Ariz., west to Fort Huachuca, about 15 miles. Surveys are now being made. H. J. Simmons, general manager, El Paso, Tex.

ESQUIMALT & NANAIMO.—See Canadian Pacific.

FERNLEY & LASSEN.—See Southern Pacific.

GRAND TRUNK.—A bill before the Massachusetts legislature provides for an extension of the main line of the Central Vermont from some point near White River Junction, Vt., across New Hampshire via Nashua to Boston, Mass. It provides also for an extension to Boston from a point on the Palmer-Providence line (Southern New England) now under construction. Permission is also asked to build a line from the Palmer-Providence line at Douglas, Mass., north to Worcester. As previously noted in these columns, the Southern New England Railroad Corporation, is building from Palmer, Mass., southeast via Brimfield, Fiskdale, Sturbridge, Southbridge, Dudley, Webster, Douglas, Uxbridge and Millville, to the Massachusetts-Rhode Island state line at Woonsocket, R. I., 58 miles, and from Woonsocket the Southern New England Railway is building via Manville, Albion, Ashton, Berkeley, Lonsdale, Central Falls and Pawtucket to Providence, about 25 miles. Contracts have been given for grading, bridges and culverts to John Marsch, Chicago, for the Massachusetts work, and to the O'Brien Construction Company, New York, for the Rhode Island work.

HUDSON BAY RAILWAY.—According to press reports, contracts for an additional 65-mile section of the line to Hudson Bay was let recently. Contracts for the final 200 miles will be let within two weeks, and it will be definitely determined in the near future whether Port Nelson, on Hudson Bay, or to Fort Churchill, will be the terminal of the line. (March 8, p. 453.)

HUTCHINSON & WESTERN INTERURBAN.—An officer writes that it has not yet been determined when bids will be asked to build from Larned, Kan., east via Pawnee Rock, Hudson, Peoca Creek, Huntsville and Pekin, to Hutchinson, 73 miles. A branch is to be built from this line north to Great Bend from a point northwest of Hudson, about 12 miles. There will be 1,800 lineal feet of pile bridges and three stations. B. E. Giles, president; C. F. Bunte, vice-president; W. A. Knorr, secretary and treasurer, and F. P. Roehr, general manager, Hutchinson.

KANSAS CITY, MEXICO & ORIENT.—See an item regarding this road under Railway Financial News.

LEHIGH & NEW ENGLAND.—An officer writes, regarding the reports that a new line is to be built from Tamaqua, Pa., through Coaldale to Lansford, that the company has no intention of building such a line. The Tamaqua extension, under construction for a year and a half, from Danielsville west to Tamaqua, 32 miles, is about completed. At Tamaqua connection is to be made with the Panther Creek Railroad, owned by the Lehigh Coal & Navigation Company. F. W. Gilcreast, chief engineer, Mauch Chunk, Pa.

LEXINGTON & EASTERN.—See Louisville & Nashville.

LOUISVILLE & NASHVILLE.—According to press reports, this company will build a 26-mile line from Winchester, Ky., southeast to Irvine, and a connection between Bettyville and Athol, to connect with the extension of the Lexington & Eastern to the Eastern Kentucky coal fields now nearing completion. It is also reported that the company plans to build 30 miles of line to a connection with the Carolina, Clinchfield & Ohio and the Chesapeake & Ohio. W. H. Courtenay, chief engineer, Louisville, Ky.

MAINE CENTRAL.—An officer writes that under the name of the Sandy River & Rangeley Lakes, a three-mile line is to be

built from Sanders station, in Madrid, Maine, east to Mt. Abraham township. Joseph Sacco has the contract. The work involves handling about 3,000 cu. yds. a mile. The maximum grades will be 4 per cent., and maximum curvature 12 deg. The line is being built to haul lumber and pulpwood.

An officer writes that the company has under consideration the question of building an extension from Kineo station, Maine, north via Seboomook to the northern end of Chesuncook lake, 47 miles. There will be about 25,000 cu. yds. of cut and fill work a mile. The maximum grades will be 1 per cent., and maximum curvature 6 deg. The plans include eight steel bridges aggregating 550 lineal feet. The line will probably not be built. T. L. Dunn, chief engineer, Portland.

MEMPHIS & PENSACOLA.—Surveys will be finished this month from Memphis, Tenn., southeast to Pensacola, Fla., and it is expected that construction work will be started this coming fall. The company was organized to build an air-line between Memphis and Pensacola, 370 miles. C. D. Smith & Co., Memphis, may be addressed.

NEWTON, KANSAS & NEBRASKA.—Incorporated in Kansas, to build from Newton, Kan., north via Canton, Roxbury and Salina, or Abilene. T. H. McManus, president, J. T. Axtell, vice-president, Newton; R. Glass, secretary, Canton; and W. Spillman, treasurer, Roxbury.

NEW YORK, NEW HAVEN & HARTFORD.—According to press reports, the Boston & Maine, which has trackage rights over the Central Vermont on two short sections along the Vermont-New Hampshire boundary, has definitely decided to build new connecting links on these sections and to cancel the present trackage agreement with the Central Vermont. This step has been under consideration for some time. The Boston & Maine has given a contract to Holbrook, Cabot & Rollins to build on the New Hampshire side of the Connecticut river from Hinsdale, N. H., to Brattleboro, Vt., 10 miles. The line will enter Brattleboro over a bridge. It is proposed also to double-track the Ashuelot branch from South Vernon, Mass., north on about 2½ miles, to a point where the new line begins. The total estimated cost of these improvements will be \$2,000,000. A petition has been filed with the Public Service Commission of New Hampshire for a charter under the name of the Sullivan County Railroad to build from Windsor, Vt., north to White River Junction.

The directors have appropriated funds to build the new line of the Boston & Maine from Hinsdale, N. H., to Brattleboro, Vt., also for a new freight yard at Ipswich, Mass.

NEW YORK, WESTCHESTER & BOSTON.—See description of this line on page 1229.

PARIS & MOUNT PLEASANT.—This company is selling \$600,000 bonds. The company has 53 miles of main line between Paris, Tex., and Mt. Pleasant, 24 miles of which are in operation from Paris to Bogota, and 29 miles under construction between Bogota and Mt. Pleasant are to be finished by October of this year. The extension to Mt. Pleasant will pass through a large hardwood timber belt, and will form a connection between five main lines. H. P. Mobberly, chief engineer, Paris.

See an item under Railway Financial News.

ST. JOHN & QUEBEC.—An officer writes that contracts have been let to build from Rothesay, N. B., to Centerville, to the following contractors: To James H. Corbett & Sons, Kittanning, Pa.; to the Quebec Contracting Company, Fredericton, N. B.; and to Kennedy & McDonald, Woodstock. The plans call for building from Rothesay on the Intercolonial, nine miles east of St. John, N. B., thence crossing the Kennebecasis and St. John rivers and following the south bank of the St. John river via Gagetown, Fredericton, Woodstock, Centerville and Andover, then crossing the St. John river to Grand Falls, about 207 miles. North of Fredericton the grades will not exceed 1 per cent. South of that place they will be .4 per cent. southbound and .6 per cent. northbound, the curvature not to exceed 7 deg. Work on half of the mileage will be heavy, and involves handling an average of 20,000 cu. yds. a mile. About 30 per cent. of this will be rock-work. There will be a number of steel spans varying in length from 40 ft. to 150 ft. each. Bridges will be built over the two crossings of the St. John and the Kennebecasis rivers and a tunnel about 2,000 ft. long. The line is being built through a good farming section, and the company expects to develop a traffic in lumber and pulpwood. When completed the line will be operated

by the Intercolonial. A. R. Gould, president, Presque Isle, Maine; R. Thompson, Fredericton, N. B. (See St. John Valley, May 24, p. 1181).

SAN ANTONIO, ROCKPORT & MEXICAN.—See Artisan Belt.

SANDY RIVER & RANGELEY LAKES.—See Maine Central.

SULLIVAN COUNTY RAILROAD.—See New York, New Haven & Hartford.

SOUTHERN NEW ENGLAND RAILROAD CORPORATION.—See Grand Trunk.

SOUTHERN NEW ENGLAND RAILWAY.—See Grand Trunk.

SOUTHERN PACIFIC.—An officer writes that under the name of the Fernley & Lassen work is now under way from Fernley, Cal., northeast to Susanville, about 130 miles. The Utah Construction Company, Ogden, Utah, has the contract. The line is to be built to carry lumber and agricultural products. W. Hood, chief engineer, San Francisco, Cal.

TALLASSEE & MONTGOMERY.—See Birmingham & Southeastern.

WASHINGTON ROADS (Electric).—A French syndicate will build a number of electric lines in the Kittitas valley, Wash. The first section to be built will be from Cle Elum, Wash., northwest to Roslyn, about five miles, and it is expected that track-laying on this section will be started soon. Surveys are nearing completion between Cle Elum and Ellensburg, about 25 miles. Connection is to be made with the Chicago, Milwaukee & Puget Sound at Cle Elum, and it is understood that this company is back of the project. A Rozinsky, Tacoma, represents the French syndicate.

RAILWAY STRUCTURES.

CLEVELAND, O.—It is reported that the Pennsylvania Lines have prepared plans for a new office building, 25 ft. x 40 ft., and a machine shop, 65 ft. x 70 ft.

DENVER, COLO.—It is reported that the Union Pacific is planning to spend \$200,000 on improvements and new machinery for its Denver shops.

EAST WACO, TEX.—The Missouri, Kansas & Texas has let contracts for grading and filling preliminary to erecting a round-house and making other terminal improvements estimated to cost \$300,000.

IPSWICH, MASS.—See New York, New Haven & Hartford under Railway Construction.

LARNED, KAN.—See Hutchinson & Western Interurban under Railway Construction.

NORTH BRADDOCK, PA.—The Pennsylvania Railroad will construct three underpasses at North Braddock, at a cost of about \$175,000. The work will probably be carried out by the company's forces.

OTTAWA, ONT.—The time for receiving bids for the construction of a station and other buildings on the Transcontinental (Grand Trunk Pacific) has been extended up to noon, June 14. P. E. Ryan, secretary, Ottawa.

QUEBEC, QUE.—M. P. & J. T. Davis, contractors, Quebec, have the contract for the structural work in connection with the Quebec bridge, and are making preparations for sinking the caisson required for the south pier, the caisson for the north pier having been put in place last year. The Dominion Iron & Steel Company has the contract, it is said, for the super-structure of the bridge.

ST. JOHN, N. B.—See St. John & Quebec under Railway Construction.

VANCOUVER, B. C.—Bids are wanted by MacKenzie-Mann & Company, Limited, Metropolitan building, Vancouver, up to noon of July 8, for the sub-structures and super-structures of 10 bridges, to be built over the Fraser, the Thompson and the North Thompson rivers, on the section of the Canadian Northern Pacific, between Port Mann, B. C., and Yellowhead Pass.

WESTWEGO, TEX.—The Texas & Pacific has announced plans for the reconstruction of its Westwego yards at an estimated expenditure of \$50,000, and eventually the construction of a round-house and shops.

Railway Financial News.

BIRMINGHAM & SOUTHEASTERN.—This company on May 3 acquired the control of the Tallassee & Montgomery. The Tallassee & Montgomery owns from Tallassee, Ala., to Miltstead, 6 miles.

BOSTON & PROVIDENCE.—Governor Foss, on May 31, signed the bill authorizing this company, a subsidiary of the New York, New Haven & Hartford, to issue \$8,000,000 bonds previously mentioned in these columns.

CHICAGO & ALTON.—It is proposed to substitute for the present improvement and equipment mortgage an issue of \$20,000,000 6 per cent. bonds to be secured by a general mortgage. The present issue will be \$4,500,000, which has already been underwritten. The proceeds will be used for grade reductions, terminal enlargements and other improvements and betterments.

CHICAGO, MILWAUKEE & ST. PAUL.—Of the \$35,000,000 4½ per cent. convertible bonds recently issued all except about \$1,050,000 have been subscribed for by stockholders at par. The balance will be taken by the underwriters.

CINCINNATI, NEW ORLEANS & TEXAS PACIFIC.—A semi-annual dividend of 3 per cent. and an extra dividend of 2½ per cent. have been declared on the common stock. In 1911 5½ per cent. was paid, plus an extra dividend of 2½ per cent. From 1907 to 1910, inclusive, 5 per cent. was paid.

DENVER, LARAMIE & NORTHWESTERN.—W. D. Moore, of Wichita, Kan., J. E. McCarthy, of Enid, Okla., Peter Mangold, of Bennington, Neb., and Isaac Schockey, of Abilene, Kan., have been elected directors, succeeding T. C. Henry, D. M. Rothwilder, H. B. Patton and F. N. Briggs, resigned.

F. A. Bridge, second vice-president and holder of \$1,207,496 of the bonds, has made application to the district court for a receiver for the company. Bridge claims the company is being mismanaged.

KANSAS CITY, MEXICO & ORIENT.—The greater part of the 50-year first mortgage 4 per cent. bonds held by the trustees, of the 6 per cent. 5-year sterling notes as collateral security, have been deposited by the trustees with the reorganization committee, and the holders of the sterling notes who have not yet given their consent to the deposit of the collateral, are asked to do so without delay. The deposit of the collateral will not affect the position of the sterling notes as a direct obligation of the company.

Judge Pollock on May 31 authorized the receivers to receive a bonus of \$20,000 from a land company of Fort Stockton, Tex., for the extension of the line from Granada, Tex., to Fort Stockton, 32 miles, which is to be built. The receivers will meet at Kansas City, Mo., on June 7 to sell \$1,000,000 receivers' certificates.

NEW YORK STATE RAILWAYS.—The stockholders of this subsidiary of the New York Central & Hudson River have authorized the issuance of a new mortgage to secure the issue of \$50,000,000 50-year 4½ per cent. bonds previously mentioned in these columns.

PARIS & MOUNT PLEASANT.—Peabody, Houghteling & Co., Chicago, are offering at par and interest \$600,000 first mortgage sinking fund 6 per cent. bonds of July 1, 1912-1932, redeemable on or after July 1, 1915, at 105. These bonds will be secured by a first mortgage on all the property now or hereafter owned. The total amount authorized is \$2,000,000, of which \$1,400,000 is reserved for future construction, subject, however, to the approval of Peabody, Houghteling & Co. This road runs from Paris, Tex., to Bogart, 24 miles, and is under construction from Bogata to Mount Pleasant, 29 miles.

PERE MARQUETTE.—Judge Angell, of the United States District Court, on May 29 granted permission to issue \$3,500,000 receivers' certificates of which \$1,800,000 will take care of the outstanding equipment obligations, and \$1,700,000 will be for new equipment and improvements. These certificates will be payable in not exceeding three years. They will bear 5 per cent. interest and will be redeemable on any interest date with a premium of 1 per cent. They will be bought by J. P. Morgan & Co., New York. They will be made a lien on all the prop-

erty of the Pere Marquette, subordinate to under-lying mortgages except the consolidated mortgage of 1901, and prior to all other liens on the property. Judge Angell also granted permission to pay the interest on the Chicago & West Michigan bonds out of earnings. This permission had previously been refused because of the opposition of Receiver Blair, who objected on the ground that the equipment obligations should be taken care of first. When permission was received to issue the receivers' certificates, Mr. Blair withdrew his objection and joined Receivers Erb and Waters in the petition to the court to reverse the decision regarding the payment of the interests on the Chicago & West Michigan bonds. The indebtedness for which no provision has been made amounts to \$24,306,000, as follows: Refunding 4 per cent. bonds of 1905, \$10,106,000; 5 year 6 per cent. notes, dated March 1, 1911, and secured by a deposit of the improvement and refunding bonds of the same date, \$8,000,000; loan of \$1,200,000 made in February, 1912, and due June 28, 1912, secured by deposit of \$1,364,000 par value general mortgage bonds of the Cincinnati, Hamilton & Dayton, and by \$1,200,000 Pere Marquette improvement and general refunding bonds; 6 per cent. debenture bonds due July 1, 1912, \$5,000,000.

READING COMPANY.—Daniel Willard has been elected a director, succeeding Oscar G. Murray, resigned.

ST. LOUIS & SAN FRANCISCO.—The court of appeals at Albany, N. Y., on June 4 decided against this company a case involving the issue of refunding bonds. The action was taken by the St. Louis & San Francisco against the Guaranty Trust Co., New York. The railway company gave to the defendant as trustee, a refunding mortgage on its property to secure an issue of \$85,000,000 bonds to mature in 1951, the proceeds to be used to retire underlying bonds for improvements and for additions and betterments. Of this amount, \$59,000,000 was authorized to retire underlying bonds, and about \$46,000,000 have been so issued, the remainder being held in reserve to be exchanged for underlying bonds at or before maturity. It was found that \$1,997,000 bonds will mature later than the refunding bonds, and the railway company asked that this sum be made available for use in providing additional rolling stock as it would not be needed for refunding purposes. The trust company refused, saying that it could not deliver the bonds except for refunding purposes. Judge Gray in his opinion said that the terms of the mortgage are not unreasonable and the plaintiff should be held strictly to its engagements. The language of the mortgage, when properly interpreted, clearly shows that no portion of the refunding bonds which were reserved to take up the outstanding underlying bonds could be used for general corporate purposes until all of the underlying bonds had been retired.

SEABOARD AIR LINE.—Plans are said to be under way to deposit the stock of the Seaboard Air Line Railway in the hands of a voting trust, to be headed by Frank A. Vanderlip, president of the National City Bank, New York; S. Davies Warfield, who represents the Baltimore shareholders, and A. H. Wiggin, president of the Chase National Bank, New York. The voting trust will last at least one year, and probably three. It is also proposed to begin dividend payments on the preferred shares. Seaboard Air Line has outstanding \$37,019,000 common and \$23,894,000 preferred stock.

TALLASSEE & MONTGOMERY.—See Birmingham & Southeastern.

WABASH.—The Appellate Division of the Supreme Court on May 31 decided that valid defenses were interposed by the directors of the Wabash in a suit by James Pollitz as a stockholder, to set aside as fraudulent an issue of \$10,000,000 common stock of the Wabash which was traded for \$10,000,000 common stock of the Wabash-Pittsburgh Terminal Company, claimed to be without value. The Wabash was not insolvent at the time the suit was brought; but the terminal company was, and in suing for \$10,000,000 damages in behalf of the stockholders, Mr. Pollitz charged that the defendant directors engineered the scheme in order to put through a deal to get \$10,000,000 Wabash stock and \$33,400,000 of the terminal company bonds for \$20,000,000. The defenses upheld by the Appellate Division are that the transaction was ratified by a majority vote of the stockholders when it was read to the stockholders in the annual report of the Wabash, and that 79 per cent. of the stockholders and 73 per cent. of the bondholders voted to approve it.